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POSTOPERATIVE MASSIVE ATELECTASIS

II. THE EFFECT OF HYPERVENTILATION WITH CARBON DIOXIDE *

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AND

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In a previous paper,[1] evidence was presented which indicated that the posture of the patient both during the operation and in the early postoperative period influenced the localization of postoperative massive atelectasis. It is our purpose in this paper to study the influence of variations in respiratory volume on the development of postoperative massive atelectasis. There are now available excellent papers covering the incidence and the clinical syndrome of this condition. Many etiologic factors have been proposed but no primary cause has been found. We ourselves believe that the process is initiated by a nervous reflex, probably largely vasomotor, which results in a narrowing of the lumen in the peripheral bronchioles by venous engorgement, swelling of the mucous membrane, and the elaboration of a tenacious secretion. Whether a common factor always initiates the reflex is uncertain, and we have felt that several secondary factors contributed to the completion, the extent and the localization of the complication. Both historically and from its suggested rôle in determining the unilateral form of the atelectasis, quantitative changes in ventilation are one of the most significant of such secondary factors.

THEORIES CONCERNING ETIOLOGY

Interference with the normal respiratory movements is the most frequent method of hypoventilation suggested in the literature of this condition. Pasteur,[2] when he first distinguished postoperative massive atelectasis from pneumonia, attributed its production to a reflex paralysis of the diaphragm and intercostal muscles, thus explaining the collapse of the lung as due to a diminution in ventilation volume on the affected side. He was influenced to this theory by his observations at postmortem of an airless condition of the lung in postdiphtheritic paralysis of the diaphragm. Bradford,[3] while admitting that such an explanation had some objections, agreed with Pasteur's theory also. As Elliott and Dingley[4] first emphasized, the inadequacy of such an hypothesis is that it does not explain the pathognomonic feature of unilateral massive atelectasis, viz., displacement of the heart to the affected side. Most recent writers on this subject have agreed that a passive compression of the lung, due to the suppression of respiratory movements, is entirely unacceptable as the primary cause of massive atelectasis. However, several have mentioned the probable significance of a diminished ventilation volume as an important contributing factor to make more effective or more lasting those primary processes that tend to obstruct the respiratory passages. Churchill[5] has recently emphasized their cooperative effect, and Scott[6] pointed out that a diminished respiratory force might well be influential in maintaining the atelectatic process. In studying the effect of posture, attention was called to the important rôle which we believe automatic hyperventilation plays in keeping free the small air passages of the opposite lung as unilateral atelectasis develops. There are recorded in the literature no direct observations of the effect produced by hyperventilation on the incidence or in the treatment of massive atelectasis.

PROPHYLACTIC HYPERVENTILATION

Our attention was first directed to the problem of prophylactic hyperventilation by a comparative study of massive atelectasis in two series of cases, one from the surgical clinic of the Lakeside Hospital and the other from the clinics of the Strong Memorial and the Rochester Municipal hospitals. Both series extended over more than a year. The incidence of massive atelectasis in the first series was 0.6 per cent. There were twelve clear-cut cases of the complication in 2,000 patients who had been operated on. This is probably about the usual percentage in a general surgical clinic. (The type of case will undoubtedly affect the incidence found in special clinics.) Scrimger[7] reported 1.3 per cent in 540 consecutive operations, and Pasteur[8] found 0.8 per cent of this complication after 2,000 operations. Consequently, it was a great surprise to us in studying the second series to find that massive atelectasis was seen only twice following 1,000 general surgical operations, an incidence of 0.2 per cent. At the same time that these patients were being followed in the Strong Memorial and Rochester Municipal hospitals, we had the opportunity of studying several instances of massive atelectasis in a neighboring hospital of the same city. It was felt, therefore, that the low incidence in the second series was not due to any local conditions and it was certainly not due to lack of careful search for the complication. In any clinic the cases of this complication are not usually evenly spaced. The time

* From the Department of Surgery, University of Rochester School of Medicine and Dentistry, and the Department of Surgery of Western Reserve University School of Medicine and the Lakeside Hospital.

1. Scott, W. J. M., and Joelson, J. J.: Postoperative Massive Atelectasis: I. The Influence of Posture, Arch. Surg. **15**: 855 (Dec.) 1927.
2. Pasteur, W.: Massive Collapse of the Lung, Lancet **2**: 1351, 1908.
3. Bradford, J. R.: Massive Collapse of the Lung as a Result of Gunshot Wounds, with Especial Reference to Wounds of the Chest, Quart. J. Med. **12**: 127 (Oct.) 1918 (Jan.) 1919.
4. Elliott, T. R., and Dingley, L. A.: Massive Collapse of the Lungs Following Abdominal Operations, Lancet **1**: 1305, 1914.
5. Churchill, E. D.: Pulmonary Atelectasis with Especial Reference to Massive Collapse of the Lung, Arch. Surg. **11**: 489 (Oct.) 1925.
6. Scott, W. J. M.: Postoperative Massive Collapse of the Lung, Arch. Surg. **10**: 73 (Jan.) 1925.
7. Scrimger, F. A. C.: Postoperative Massive Collapse of the Lung, Surg. Gynec. Obst. **32**: 486 (June) 1921.
8. Pasteur, W.: Massive Collapse of the Lung, Brit. J. Surg. **1**: 587, 1914.

interval of from one and one-half to two years discounts this factor as accounting for the difference. Consequently, we feel that this represents a true diminution in the incidence of massive atelectasis in the second series, and we compared the conditions of the two series in order to find factors that might account for this difference.

Only two conditions which we felt might be related to the problem were discovered: 1. All patients of the second series were on Gatch beds, so that regularly after operation the patient was put up into a semi-Fowler position, whereas in the first series only a certain number of such beds were available and unless the patient was especially sick he was usually kept flat in bed immediately after the operation. This factor may play a certain rôle but is probably of much less importance than the second one. 2. Nearly all patients operated on under general anesthesia in the second series were given hyperventilation by carbon dioxide administration either during the anesthesia or at the end of the operation or both. Those who had ether anesthesia by the open method were given carbon dioxide for a few minutes before they left the operating room, and those who were anesthetized with nitrous oxide in addition to rebreathing usually had a certain amount of carbon dioxide added to the gas mixture, and also, if the operation was prolonged, were given hyperventilation by carbon dioxide-oxygen at its close.

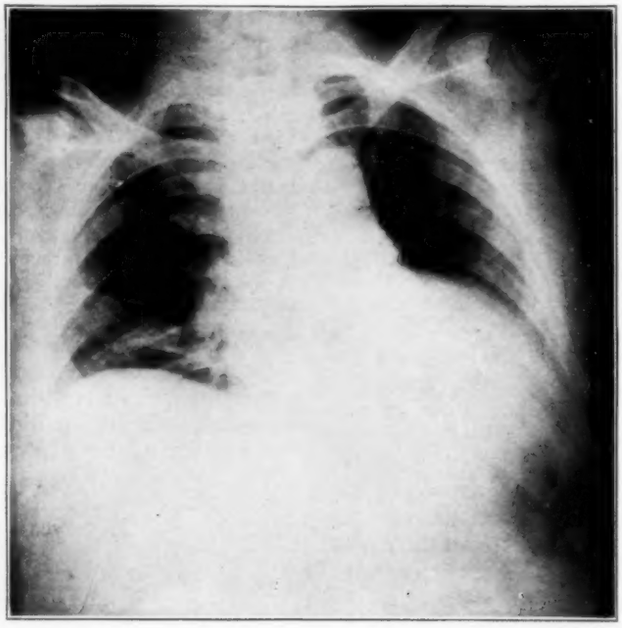

Fig. 1 (case 2).—Condition twenty-four hours after operation. Postoperative massive atelectasis, probably bilateral, but involving predominantly the left lower lung. Note the complete obliteration of the left diaphragm shadow; the left border of the heart reaches to the lateral thoracic wall. There is also an area of opacity probably due to atelectasis above the right diaphragm.

Hyperventilation with carbon dioxide is easily carried out after operation. Henderson and Haggard[9] devised for this purpose a special mask which mixed pure carbon dioxide with inspired air. There is a safety valve to prevent the patient from getting too much of the gas. Perhaps this type is the best when it is necessary to have one piece of apparatus for hyperventilation alone. White[10] adopted it for deetherization. However, carbon dioxide is administered easily and safely from any of the modern standard gas machines. The following is the procedure which we use, no other special apparatus being necessary: The gas from a tank of 30 per cent carbon dioxide and 70 per cent oxygen is delivered undiluted to the mask; the anesthetist varies the amount of carbon dioxide given by allowing the admixture of air around the mask, and by the interval the latter is held in position. The whole purpose of the procedure is to hyperventilate fairly vigorously but not sufficiently to tire the patient or to raise the blood pressure excessively. After the patient begins to breathe deeply and at a slightly increased rate, the mask is removed or lifted and the hyperventilation diminishes. Usually several such waves of increased depth of respiration are produced in this manner over a period of from five to ten minutes. For a moderately long ether anesthesia this does not suffice to deetherize the patient completely to the point of consciousness, though it usually improves the color and the pulse volume. The purpose of this routine hyperventilation is not primarily that of deetherization but the prophylaxis of massive atelectasis. The precaution is always taken that hyperventilation is not carried to the extent of tiring the patient. Infants, persons with pulmonary disease, and cachectic patients are the only ones not given hyperventilation.

The 30 per cent carbon dioxide and 70 per cent oxygen mixture is used for the reason that two or three patients will use up a tank of the 5 per cent carbon dioxide gas. Whatever strength of gas is used, the anesthetist must decide when a sufficient and not excessive degree of hyperventilation has been obtained. In none of our cases have we seen the least harmful effect of hyperventilation by this method. In fact, the patient's general condition seems usually distinctly benefited by it.[11]

The two patients with massive atelectasis in the second series seem to be instructive in this connection. Both were exceptions to the general rule of the series, and neither had hyperventilation with carbon dioxide.

CASE 1.—In a woman with severe exophthalmic goiter, in a dangerous condition from prolonged hyperiodinization before coming under our care, the condition was still so serious after the maximum immediate preparation for operation by rest in bed and the administration of iodine that it was felt that ligation of the superior thyroid vessels was all that should be done. This was carried out quickly under nitrous oxide anesthesia, and in view of the short duration of the anesthetic no carbon dioxide was added. At the end of the operation the patient's condition was but slightly changed. She made an excellent immediate postoperative recovery, but about twenty-four hours after operation developed the typical picture of left massive atelectasis, verified by roentgen-ray examination. Her condition rapidly became critical; she showed great restlessness with a mounting tachycardia and died three days after the ligation. An autopsy was refused. It was our belief that intrapulmonary infection, which is almost always associated with postoperative massive atelectasis, precipitated a fatal acute hyperthyroidism. It is to be noted that on account of the simplicity of the operative procedure this patient was not given hyperventilation at the close of the operation.

CASE 2.—In this patient a simple uncomplicated cholecystectomy requiring forty-five minutes was performed under ether anesthesia. As the operation and anesthesia had been brief and entirely uncomplicated, the anesthetist omitted the usual hyperventilation with carbon dioxide at its close. The immediate recovery of consciousness was rapid and the patient did

9. Henderson, Yandell; Haggard, H. W., and Coburn, R. C.: The Therapeutic Use of Carbon Dioxide After Anesthesia and Operation, J. A. M. A. **74**: 783 (March 20) 1920.

10. White, J. C.: Deetherization by Carbon Dioxide Inhalation, Arch. Surg. **7**: 347 (Sept.) 1923.

11. A detailed discussion of postoperative hyperventilation is given by:
Haggard, H. W.: The Absorption, Distribution and Elimination of Ethyl Ether, J. Biol. Chem. **59**: 753 (April) 1924.
Henderson, Yandell: Respiration in Anesthesia: Control by Carbon Dioxide, Brit. M. J. **2**: 1170 (Dec. 19) 1925.
Righetti, E.: Deetherization with Carbon Dioxide, Anesth. & Analg. **5**: 8 (Feb.) 1926.
MacKenzie, J. R.: Carbon Dioxide in Gas and Oxygen Anesthesia, Anesth. & Analg. **6**: 91 (April) 1927.
Davies, H. W.: Simple Portable Apparatus for Therapeutic Administration of Carbon Dioxide, Brit. J. Anesth. **4**: 148 (Jan.) 1927.

not present any abnormal symptoms in the first few hours. Twenty-four hours after operation, however, the symptoms of a postoperative pulmonary complication developed, with dulness and suppressed breath sounds at both bases, more pronounced at the left. A roentgenogram of the chest (fig. 1) showed opacity in both lungs, more marked at the left base than at the right and accompanied by displacement of the heart and mediastinum to the left. This is evidence of massive atelectasis predominantly affecting the left side but probably involving the right also. Here again it is noteworthy that the patient was not given hyperventilation because of the simplicity of the operation and anesthesia. It is worth mentioning in this connection that many cases of massive atelectasis follow the most simple and uncomplicated laparotomies.

After studying these two cases and discussing the matter with Miss Gerrard, who was chief anesthetist of the Strong Memorial Hospital, it was decided that in the future all patients having a general anesthesia would be given hyperventilation at the termination of the operation, unless there were some contraindication to the administration of carbon dioxide.

We are presenting these observations at the present time not as conclusive evidence that hyperventilation following operation combined with keeping the patients in a semi-Fowler position will prevent all instances of massive atelectasis, nor even as proof that these factors will diminish the incidence of this complication if used as prophylactic measures, but because we wish to publish the data in these series at the present time as a preliminary report in the hope that other clinics may also try the effect of these measures, which we believe have definitely diminished the incidence of postoperative massive atelectasis in our clinics.

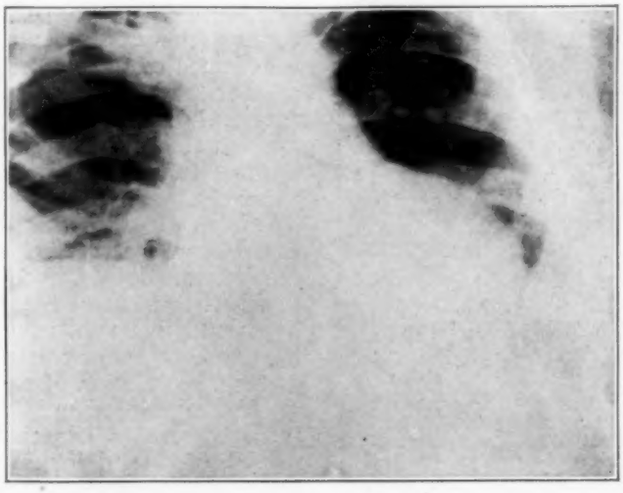

Fig. 2 (case 2).—Roentgenogram taken on the fluoroscopic screen after hyperventilation with carbon dioxide. Note especially that the partially aerated lung now separates the heart from the lateral thoracic wall and that the shadow of the left diaphragm is discernible.

It is our belief that there is associated with all operations on the thorax and abdomen a tendency to splint respiratory movements. Churchill [5] has recently called attention to the marked diminution in vital capacity after such operations. Powers,[12] working in the Lakeside Surgical Clinic, also noted this phenomenon, and further demonstrated that the preoperative determination of a diminished vital capacity was an important index of an increased liability for the patient to develop some form of postoperative pulmonary complication. If the operation is carried out under general anesthesia, this adds another factor tending temporarily toward the depression of respiration. Any fundamental condition, such as the nervous reflex which we believe is the primary etiologic agency in massive atelectasis, tending to produce obstruction of the smaller air passages, would be greatly aided toward the accomplishment of that end by hypoventilation immediately and for several hours after operation. Conversely, hyperventilation at the close of operation would greatly assist in keeping open these fine air passages, and would tend to counteract the effect of the hypothesized reflex. Induced hyperventilation would here act to prevent the development of the atelectatic process much as we presume automatic hyperventilation does in keeping the opposite lung free in unilateral massive atelectasis.

12. Powers, J. H.: Unpublished data.

THERAPEUTIC HYPERVENTILATION

Provided the development of the atelectatic process is assisted by hypoventilation, in the early stages of the complication hyperventilation with carbon dioxide should be somewhat beneficial as a method of treatment, at least temporarily. This hypothesis was put to the test in case 2 of the second series, already described. Figure 1 shows the condition before hyperventilation. Hyperventilation was then caused by adding a mixture of 30 per cent carbon dioxide and 70 per cent oxygen to the air breathed for periods of about a minute at a time, interspersed with rest periods of about two minutes. As the respirations increased greatly in depth, the opaque lung at the left base lighted up and the diaphragm, which previously could not be discerned, was clearly outlined. The heart, which extended almost to the left border of the chest, moved back to the right with the deep respirations. This observation was made under the fluoroscopic screen, and orthodiagrams of the heart were outlined on a fixed glass plate by Dr. S. L. Warren. After hyperventilation the heart moved to the right a maximum of 5 cm. (Figures 3 and 4 are reconstructions from these orthodiagrams.) After the breathing of the carbon dioxide mixture was discontinued, the opacity of the lung and displacement of the heart tended to recur, but not to the extent present previously. Figure 2 shows the condition after the hyperventilation. The luminescence of the left lung base as compared to the condition previous to the treatment (fig. 1) is the most definite change shown by the roentgenograms. Under the fluoroscope it could be seen that the position of the apex was about 2 cm. toward the median line from its original situation. Subjectively, the patient thought that her breathing was somewhat easier after the respiratory stimulation by carbon dioxide. Six hours later, however, the patient's condition was practically the same as before this treatment. The respirations and pulse rate became very rapid and she died the next day. Most unfortunately, an autopsy was not permitted. However, from the clinical signs combined with the roentgen-ray evidence, it seems definite that the patient had a bilateral massive atelectasis, which affected the left lung to a greater extent than the right. The immediate improvement in the opacity of the lung and the position of the heart caused by hyperventilation was striking.

COMMENT

Further observations will be necessary before a definite statement can be formulated as to the value of hyperventilation in the treatment of fully developed

massive atelectasis. Certain conclusions, however, seem to be justified by the observation of the case recorded. In the first place, hyperventilation produced an immediate increase in the distention of the collapsed lung within the atelectatic area, and a significant movement of the heart toward its normal position. From this fact alone it is probable that the extent of pulmonary collapse is in part dependent on the respiratory volume. It seems reasonable to assume that if hyperventilation could be applied at the correct time, it would at least partially oppose those factors that were causing local respiratory obstruction. Studley,[13] in a careful study of the postoperative pulmonary complications occurring in the Lakeside Hospital Surgical Service, made the interesting observation that massive atelectasis was the only such condition which frequently showed its initial symptoms within the first twelve hours. In a previous

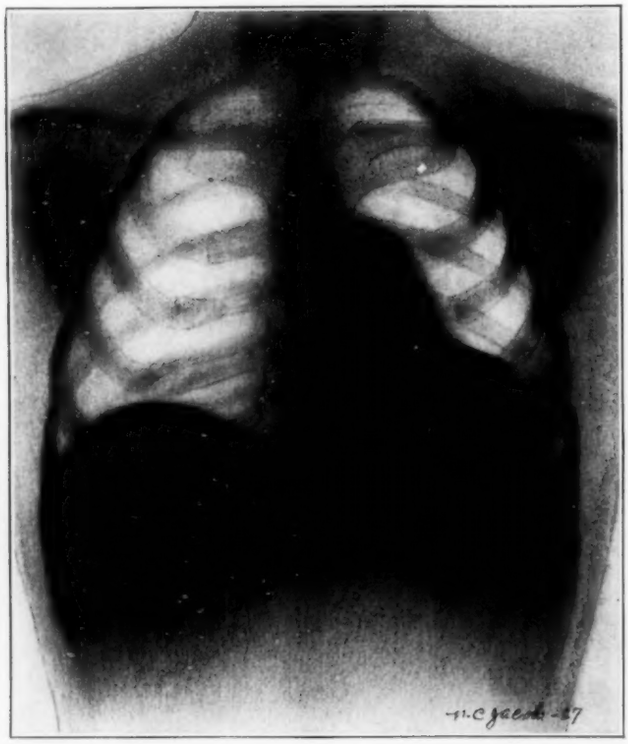

Fig. 3 (case 2).—Reconstruction of the fluoroscopic appearance made from orthodiagrams just before hyperventilation.

study,[6] one of us reported that the onset of symptoms occurred within twenty-four hours of operation in half of the forty cases of massive atelectasis analyzed. It is apparent, then, that the immediate interval after operation is probably the most important one in the development of this complication. By the routine application of a period of hyperventilation at the close of all operations under general anesthesia, it is our belief that the incidence of massive atelectasis can be distinctly reduced. All factors assisting in the augmentation of the ventilation volume during the first twenty-four to forty-eight hours after operation will probably also assist toward this end. Probably the semi-Fowler position helps somewhat to increase the respiratory exchange, as Briscoe [14] has so strongly urged. We feel, however, that this factor of recumbency is not a determining one but acts only so far as it tends toward hypoventilation. We want to reiterate again our firm conviction that, as far as the ultimate etiology of massive atelectasis is concerned, all such factors as ventilation volume, posture and tenacious secretion are secondary, and that the originating agency is a nervous reflex, probably of vasomotor origin. However, from the therapeutic point of view, if this primary influence for the production of massive atelectasis can be overcome by hyperventilation, it should be adopted as a practical routine measure after operation.

Sante [15] has recently reported immediately favorable results, as seen fluoroscopically, from rolling the patient on the uninvolved side. Undoubtedly from such a procedure there is a partial immobilization of the uninvolved side, and to compensate the depth of respiration is increased. By this method hyperventilation has thus been produced in the collapsed lung. Whether any result of this maneuver is dependent entirely on the increase in the ventilation volume or is also due to a partial relief of distended pulmonary vessels on the atelectatic side or to other factors is uncertain. The procedure is so simple that it should be tried in cases of fully developed massive atelectasis. (We must confess that we have not seen any striking results from this procedure in our cases, possibly because we did not continue the process long enough, for when the patient complained of discomfort we allowed him to return to another position.) We have observed, however, as previously reported, that turning the patient on the affected side caused him discomfort or distress within a short time, as Sante mentions. Furthermore, the removal of thick tenacious secretion from the bronchi by means of bronchoscopy as advised by Jackson and Lee [16] would also tend to improve the freedom of respiration. It is probably true that the accumulation of such secretion in the bronchi does tend to produce hypoventilation in the lung field affected. At present it is wise to adopt a conservative attitude in judging of the specific effect of any method for rapidly clearing up fully developed massive atelectasis. Each of these three methods, bronchoscopic aspiration, postural manipulation, and hyperventilation by carbon dioxide, has apparently produced rapid partial reinflation in the atelectatic area, and after all of them deflation is prone to recur. Furthermore, one of the most striking characteristics of the syndrome is the sudden improvement that not infrequently occurs spontaneously.

Whatever method of attempting to overcome the obstruction of the respiratory passages is adopted, it is probable that only secondarily is the mechanism of massive atelectasis affected. However, until the primary condition is more exactly determined and, if it is a nervous reflex, its pathway found, it is only through such secondary effects that we can hope to influence the development of the complication. If the vasomotor reflex could be prevented, we believe that, in spite of all such secondary factors as posture and hypoventilation, massive atelectasis would not occur. To oppose the respiratory obstruction in its inception is, we believe, at present the best method of preventing this complication or at least diminishing its incidence. Probably certain cases will occur even under such a regimen. The examples of the condition occurring in soldiers, who walked back to the casualty clearing stations after

13. Studley, H. O., Jr.: To be published.
14. Briscoe, J. C.: The Mechanism of Postoperative Massive Collapse of the Lung, Quart. J. Med. **13**: 293 (April) 1920.
15. Sante, L. R.: Massive (Atelectatic) Collapse of the Lung, with Especial Reference to Treatment, J. A. M. A. **88**: 1539 (May 14) 1927.
16. Jackson, Chevalier; and Lee, W. E.: Acute Massive Collapse of the Lungs: Discussion of Its Mechanism and of Its Relation to Foreign Bodies in Bronchi and Postoperative Complications, Ann. Surg. **82**: 364 (Sept.) 1925.

slight wounds and were there found to have massive atelectasis, makes it extremely probable that the same result will occasionally be found to occur after operation when such secondary factors as posture and ventilation-volume are the most favorable.

SUMMARY

As a corollary of the observations so far made in regard to the effect of hypoventilation and of posture on the development of postoperative massive atelectasis we advise the following regimen:

1. All patients operated on under general anesthesia should be given hyperventilation by breathing a mixture of carbon dioxide and oxygen at the end of the operation.

2. In the first forty-eight hours after operation patients should be kept in a semi-Fowler position unless there is some contraindication thereto, and care should be taken that the patient does not lie constantly on one side.

3. Periods of deep breathing at frequent intervals during the first twenty-four hours should be encouraged.

4. Postoperative dressings should be so arranged as to hinder respiration as little as possible.

At the present time series of cases in which operation has been performed are being studied in the three hospitals mentioned in an attempt to obtain a more exact analysis of the value of such a regimen.

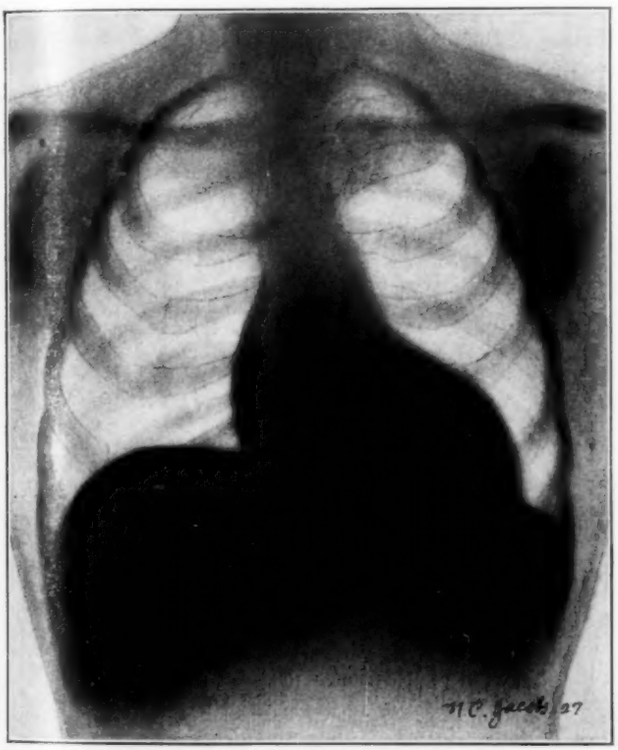

Fig. 4 (case 2).—Effect produced by several repeated short intervals of hyperventilation from adding carbon dioxide to the inspired air.

CONCLUSIONS

1. Hyperventilation with carbon dioxide at the close of operation combined with a semi-Fowler position after operation has apparently reduced the incidence of massive atelectasis as a postoperative complication.

2. Hyperventilation in one case of fully developed massive atelectasis has caused an immediate diminution in the opacity of the lung and in the displacement of the heart as seen under the fluoroscope. This improvement was only temporary.

3. A postoperative regimen is suggested to diminish the incidence of massive atelectasis. This is a preliminary report, and the effect of such a regimen is now being further studied.

THE TREATMENT OF NEVI

WITH PARTICULAR REFERENCE TO HIGH FREQUENCY CURRENT

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Nevi[1] are extremely common abnormalities of the skin, and their treatment is of considerable importance. When occurring on the exposed parts of the body they frequently are of profound psychologic significance to the patient.[2] Here the aim in treatment is to obtain the best cosmetic results. In another type, appearing on any part of the cutaneous surface, malignant change is potential. In this type, cosmetic results become subservient to the vital need of completely destroying the lesion as a precursor of malignant disease.

Nevi, though usually congenital, may appear subsequent to birth. They occur in both sexes, presenting themselves in a great variety of clinical and pathologic formations on any part of the skin, and may also involve the mouth, tongue, lips, genitalia and, indeed, the nails and hair. In size, nevi vary from that of a pinhead to an involvement of a considerable part of the body. They exhibit great variations in color, shape, numbers and surface appearance; they may be papular, macular, verrucous, linear, variegated, striated or in the form of grotesque masses.

METHODS OF TREATMENT

The destruction of nevi by means of the application of caustics is an inferior method. It is painful; treatment is usually prolonged, and tissue destruction is difficult to control. The cosmetic result is usually poor. The injection of caustics into an angioma (unless the base is ligated) is not without danger.

Used collectively in the treatment of nevi, the roentgen ray and radium are of limited value. Destruction of the nevus is generally accomplished at the expense of injuring the skin, causing a necrosis or subsequent atrophy and telangiectasia—a degree of radiodermatitis. I have seen a number of unfortunate sequelae. Not only is radiodermatitis a poor cosmetic result, but it

1. There is considerable discussion as to what lesions should be classified as nevi. Literally, a nevus is a spot or blemish. The term, however, has required certain limitations which, in their strictest meaning, make it synonymous with birthmark, and in this sense it is employed for all forms of neoplasm due to developmental errors which are present at birth. There is little doubt, however, that nevi, though usually congenital, also appear after birth, even some years after. Therefore a less restricted term would include also growths, which, although due to developmental errors, may appear subsequent to birth. If, as some maintain, the term should include only those lesions in which histologically the so-called nevus cell is present, further restriction is added to it. A broad view of nevi embraces any congenital anomaly in the skin present at birth or appearing subsequently. This concept of nevi, particularly championed in this country by Highman (Dermatology, New York, Macmillan Company, p. 345), makes the term synonymous with anomaly. A classification of nevi, according to this broad view, embraces a number of lesions which would necessarily be excluded under the restricted view. Crocker (Diseases of the Skin, ed. 3, Philadelphia, P. Blakiston's Son & Co., p. 932) employs the term "embryogenic" for all neoplasms which probably derive their origin from defects arising in fetal life.

2. There was a remarkable change in the mental poise of the patient shown in figure 4 after the removal of the nevus, prior to which she was reticent, listless and of a "shut-in" type. There is considerable to the psychologic phase of dermatology which is of much practical importance. This has been brought out in a previous paper (Klauder, J. V.: The Cutaneous Neuroses, J. A. M. A. **85**: 1683-1689 [Nov. 28] 1925).

constitutes a hazard, since epithelioma may develop as a sequela. Hence, in the treatment of any nevi with the roentgen ray and radium, if it has been determined that in order to cause a disappearance of the nevus an amount of radiation will be required that will seriously injure the skin, it is desirable to stop treatment. The roentgen ray, but more particularly radium, is of special value only in certain types of angioma. In these instances, radiation is effective without injuring the skin.

Fig. 1.—A verrucous nevus present since birth. It was destroyed by high frequency current, under gas anesthesia, in three stages.

The thermocautery is a useful agent in the treatment of small nevi, but its usefulness is limited. In the destruction of large nevi, this method is time consuming and not practical. Moreover, the thermocautery destroys tissue by transmitted heat, by burning and charring. The effect is relatively superficial; healing is delayed, and the character of the scar is not likely to be as pliable as that resulting from the use of the high frequency current. The latter may generally be substituted for the thermocautery, with superior results.

Electrolysis is appropriate only for small superficial nevi, in the treatment of which good cosmetic results are obtained. It is of questionable safety in the destruction of pigmented nevus, as will be shown later. Electrolysis, however, does not offer any advantage over the high frequency current.

Refrigeration consists in the application of carbon dioxide snow or liquid air. The latter is difficult or impossible to obtain. In the treatment of small nevi, good cosmetic results may be obtained. With large nevi, however, it is not the method of choice, as the cosmetic results are generally poor: the scar is uneven and the skin unevenly colored.[3]

The ultraviolet ray is indicated and may be useful in only one type of angioma, to be considered later.

3. The Lortat Jacob cryocautery method of employing carbon dioxide snow is superior to the usual method (Lortat-Jacob, L.: La cryotherapie, Progrès méd. **38**:603 [Nov. 24] 1923).

The surgical excision of nevi is usually undesirable, since the cosmetic results are inferior. In nevi, as shown in figures 1, 2, 3, 5 and 7, surgical excision is inappropriate and difficult of accomplishment. Surgical excision, however, in certain types of angioma, may give good results.

THE HIGH FREQUENCY CURRENT

The high frequency current is more useful and more generally the method of choice in treatment than any other agent. This method gives such superior results that it can advantageously be employed in the treatment of all types of nevi (indeed, in any benign or malignant neoplasm). The only exception to this statement is in the treatment of certain angiomas in which the ultraviolet ray, the roentgen ray, but more particularly radium, may be the methods of choice.

The value of the high frequency current in the treatment of nevi has been rather slow of general recognition. Most textbooks on dermatology make little or no mention of this means of destroying nevi.

The advantages of the high frequency current are as follows:

It is a quick and economical method. Destruction of tissue can be so controlled, through regulation of the proper current strength, that lesions varying in size from a pinhead to a considerable mass (similar to that shown in figures 1, 2 and 3) can be destroyed with a minimum degree of scar. Bleeding can be better controlled. The current renders the operative site aseptic.

Fig. 2.—Appearance after complete healing of the areas operated on. In places the scar was thick and elevated and was treated with filtered roentgen ray.

The tissue is not burned or charred, so that healing is expedited. The character of the scar is more likely to be soft and pliable. The disadvantages are that the method is painful, necessitating either local or general anesthesia. The patient is subjected to the inconvenience of having a healing area, which necessitates the use of a dressing.

ELECTRODESICCATION, ELECTROCOAGULATION AND TISSUE CUTTING (ENDOTHERM KNIFE)

Electrodesiccation[4] is a term designating a method of superficial destruction of tissues by heat, produced by a monopolar high frequency current of the Oudin type. Electrocoagulation is a more intensive, penetrating destruction of tissues by a bipolar high frequency current of the d'Arsonval type. The destruction of tissue is produced by heat generated in the tissues, resulting from their resistance to the flow of the current. The electrode discharging the current remains cold. The Oudin current (electrodesiccation) produces a dehydrating effect on tissue, whereas the d'Arsonval current (electrocoagulation) produces a coagulating effect.

Fig. 3.—Final result, after roentgen-ray treatment, about eighteen months after destruction of the nevi. The scar was soft, pliable and almost flesh colored.

The endotherm knife is a term employed to designate tissue cutting (by coagulation) by means of undampered oscillations of the high frequency current. Here, tissue destruction is not produced by heat but by molecular disruption of protein or fat, when a small arc is formed between the electrode and the tissue.

Electrodesiccation is employed in the destruction of small or moderate sized nevi, such as are shown in figures 4, 5, 6 and 7, whereas electrocoagulation, a more intensive penetrating method of destruction, is employed in the treatment of the massive type of nevi, such as is shown in figures 1, 2 and 3. In these types the so-called endotherm knife may also be employed. This method is perhaps superior to electrocoagulation only in that it removes, or cuts away, so to speak, elevated tissue, much more quickly than it can be destroyed by electrocoagulation. Bleeding can be better controlled, and healing is perhaps quicker. The endotherm knife is less appropriate in the removal of small, flat nonelevated nevi. In small and moderate sized elevated nevi (fig. 6) the endotherm knife may be employed as a rapid and effective method in cutting away the nevus to the level of the skin. In this event, a wire loop with a diameter ranging from 0.5 to 1.5 cm. is best employed as the electrode. Care must be exercised, however, to avoid unnecessary destruction of normal tissue (if the lesion is not premalignant), which easily occurs with this penetrating method. For small and moderate sized nevi, destruction can be better controlled by electrodesiccation than by the endotherm knife.

In destroying nevi not potentially malignant by a high frequency current, the aim is to destroy only the lesion, no more, no less, in order to obtain the best cosmetic result. Insufficient destruction necessitates a second operation, and unnecessary destruction of normal tissue produces excessive scar.

When to stop destruction as the level of the skin is approached must be learned by experience. If electrocoagulation is employed in the destruction of massive nevi, it is desirable to change to the less destructive unipolar method of electrodesiccation as the level of the skin is approached, in order to prevent unnecessary destruction of normal tissue, which, of course, favors a good cosmetic result.

The proper current strength to be employed depends on the size of the lesion and must be learned by experience. Again, the quality of the current produced is influenced by the varied constructions of the different high frequency machines.

The care of the wound after the destruction of a large nevus is helpful in obtaining a desirable scar. Treatment to prevent infection and frequent cleansing and dressing of the wound should be practiced. I employ constant wet compresses of solution of chlorinated soda, 1:20. Exposure of the wound to the ultraviolet ray or to the sun expedites healing.

Even though the proper current strength is employed in the destruction of moderate sized or large nevi, the cicatrix may present thickened elevated or keloidal areas. These areas are treated with the roentgen ray in order to produce a pliable, smooth scar. Figure 2 shows such keloidal areas which were effectively treated with the roentgen ray. This use of the roentgen ray is invaluable in obtaining good cosmetic results.

Fig. 4.—A bluish black mole potentially malignant. Complete destruction is necessary because of the danger that insufficient treatment will predispose to malignant change.

The patient shown in figure 1 had had a massive verrucous nevus since birth. It involved part of the scalp, forehead and eyelid, the greater part of the right side of the face, the ear, the mastoid region and part of the neck. In front of the ear it was a thick mass about 8 by 10 cm. and about 8 cm. thick. At places the surface was moist, crusted and odorous. It was destroyed mostly by electrocoagulation, and as the level of the skin was approached, electrodesiccation was

4. There is considerable confusion in the terms designating the use of the high frequency current. Terms designating monopolar high frequency are electrodesiccation (Clark), fulguration (deKeating-Hart) and monopolar endothermy (Wyeth); bipolar high frequency, electrocoagulation (Doyen), bipolar endothermy (Wyeth), surgical diathermy (Nagelschmidt); tissue cutting by undampered oscillations of the high frequency current, radio knife, electrothermic knife, endotherm knife (Wyeth) and acusector (Kelly).

employed. The latter method was employed around the eyelid and the ear. The destruction was performed under gas anesthesia, in three stages, at intervals of ten days. The duration of each operation was about one hour. Immediately following the destruction, wet compresses of solution of chlorinated soda, 1 : 20, were constantly applied. Later, the wound was exposed daily to the sun. The cicatrix in places was raised, thick and uneven as is shown in figure 2. These areas were

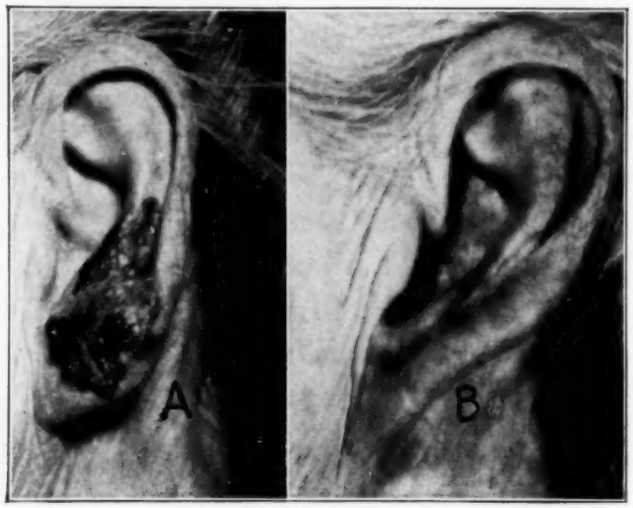

Fig. 5.—*A*, a flat pigmented nevus, a potentially malignant lesion. This appeared late in life and spontaneously ulcerated, developing into a nevocarcinoma. *B*, result of destruction by electrodesiccation, which was followed by intensive filtered roentgen-ray treatment over the area operated on and the glands in the neck.

treated with suberythema doses of filtered roentgen ray at monthly intervals. The final result is shown in figure 3. This photograph was taken about eighteen months after the operation. The scar was pliable, smooth and almost flesh colored.

NEVI AS PREMALIGNANT LESIONS: THE DANGER OF INSUFFICIENT TREATMENT

The group of potentially malignant nevi [5] include the pigmented nevi, predominantly the bluish black mole (melanotic nevus), shown in figure 4. These lesions are not necessarily present from birth. They may undergo, either spontaneously or if irritated, malignant change, becoming either carcinoma or sarcoma, in which event metastasis rapidly occurs. It is significant that in cases in which malignant change has occurred, there is usually a history of trauma incident to mechanical irritation, the application of caustics, or imperfect attempts at removal. In the patient reported by Dawson,[6] repeated scratching of the surface of a macular nevus of the forehead led to rapid malignant change. "The presence of a 'birth-mark,' though extremely probable, is not essential, and the development of melanomata has been recorded after puncture wounds, e. g., from a thorn in the foot especially in the races of the Upper Nile" (Dawson). The danger of malignancy is in proportion to the amount of pigment the nevi contain, and is also influenced by location; that is, in relation to being subjected to trauma from opposing surfaces of the skin, clothes, eye glasses, razor or shoes, or if picked or handled by the patient.

In addition to the foregoing, dangerous nevi include all circumscribed bluish black nevi, such as is shown in figure 5, and also circumscribed patches of pigmentation on areas subject to traumatism. It is advisable to destroy this type of nevi as a routine, more particularly if the lesion is subjected to trauma. If ulceration has occurred or if there is evidence of enlargement, or increase of pigmentation, radical destruction or extirpation, including a liberal zone of surrounding healthy skin and underlying tissue, becomes imperative. In this event, biopsy should be made at the time of destruction and, if a malignant condition is present, massive roentgen-ray therapy should be administered over the operative area, the lymphatics draining the area, and the adjacent lymph nodes, combined with radical surgical extirpation of the lymphatics and the lymph nodes.

Destruction of these premalignant nevi should be thorough and complete, and performed at one operation, in which cosmetic results are secondary. The roentgen ray and radium are not the methods of choice in destruction, nor, possibly, surgical excision or the thermocautery. Complete destruction can best be accomplished by electrodesiccation or electrocoagulation. To destroy these lesions incompletely by painting with caustics, by applying carbon dioxide snow, by electrolysis, by excision or by any treatment applied at intervals is a dangerous procedure. Such treatment constitutes irritation and makes malignant change potential. I have seen patients in whom the bluish black mole was so treated and the lesion became malignant with metastasis. In the propaganda for the control of cancer, this injudicious treatment of pigmented nevi should be condemned with all the emphasis at one's command.

Figure 4 shows a bluish black mole of the type here described, which if insufficiently destroyed predisposes to malignant change with metastasis.

Fig. 6.—A pigmented papillomatous nevus. Under local anesthesia it was completely excised, with a wide margin of normal skin, by the endotherm knife. The floor was then treated by electrodesiccation.

Figure 5 *A* shows a flat slate colored nevus which appeared late in life. Ulceration occurred spontaneously, and on histologic examination of a section removed at the time of destruction the growth was found to be a nevocarcinoma. In the destruction of this type of nevocarcinoma, electrodesiccation is the choice of method rather than surgical excision, or roentgen-ray or radium therapy.

Figure 5 *B* shows the result of electrodesiccation. Although there were no palpable lymph nodes, as a conservative measure massive filtered roentgen-ray therapy

5. Of the classifications of the pigmented nevi, many are too elaborate for clinical use. Dawson, however, in his comprehensive report on the melanomas, makes a simple classification based on both the clinical and the histologic appearance. The cutaneous melanomas are divided into benign and malignant. The benign include: (1) The nevus-celled tumors, potentially melanoblastic, of which the following clinical types (benign pigmented nevi) may be recognized: macular, nodular, warty, pedunculated, papillary, linear (nevus unius lateralis), diffuse (giant nevi), hairy (any one of the preceding varieties with a varying amount of hairs); (2) The secondarily pigmented nevi. These do not contain "nevus cells." The dominant histologic features are: cells proliferated (*a*) from the epidermis (acanthotic and keratotic nevi); (*b*) from the epidermal appendages (tricho and sebaceous epithelioma); (*c*) from the structural tissue elements of the corium, chiefly endothelial and connective tissue, but including also the unstriped muscle fibers, the nerve fibers and the fat cells. They are secondarily pigmented and are much less grave than the nevus-cell tumors. The malignant melanomas may arise from any of the clinical types of the nevus-cell growths. The term "malignant melanomas" signifies "melanocarcinomas or nevocarcinomas." The acanthotic group of the secondarily pigmented nevi, when they become malignant, form true squamous cell epitheliomas.

6. Dawson, J. W.: The Melanomata, Their Morphology and Histogenesis, Edinburgh M. J. **32**: 710 (Oct.) 1925.

was applied over the treated area, the side of the neck and the cervical glands. The patient, two years after such treatment, presented no evidence of recurrence and no enlargement of the lymph nodes.

Figure 6 shows a pigmented papillomatous nevus on the side of the abdomen in a man, aged 67. In early life it was flat, but gradually it became elevated and has remained unchanged for the past five years. Under local anesthesia it was completely excised, with a wide

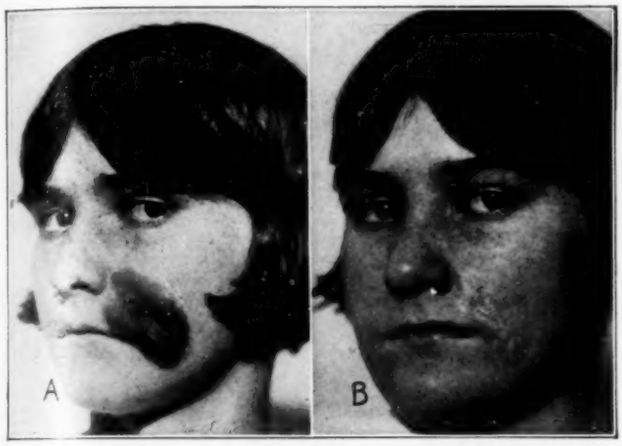

Fig. 7.—*A*, pigmented hairy nevus which was destroyed by electrodesiccation under gas anesthesia in one operation; after healing, the thickened scar was treated with filtered roentgen ray. *B*, final result, about one year after destruction; the scar was smooth, soft and flesh colored.

margin of normal skin, by the endotherm knife. The floor was then treated by electrodesiccation.

Other common pigmented nevi are the brown or yellowish brown mole usually associated with excess hair, and the pigmented hairy nevus, a circumscribed flat pigmented patch covered with hair. This type is shown in figure 7. Theoretically, any pigmented nevus is potentially malignant if irritated; yet from clinical observation it appears that these types of pigmented nevi are much less likely to undergo malignant change than the bluish black mole. Nevertheless it is prudent to avoid irritating them by insufficient and incomplete destruction. It is therefore of questionable safety to employ electrolysis to remove hair in this type of mole. It is more conservative to destroy the hair follicles and the mole in one operation either by the thermocautery or, preferably, by electrodesiccation. In the event that a few hairs still remain, they could be removed by electrolysis.

In the treatment of the pigmented hairy nevus, epilation of the hair by means of the roentgen ray or removal by electrolysis has been advocated, with subsequent destruction of the remaining pigmented patch by a variety of means. This method I regard as undesirable and unnecessary. I believe that the best method is destruction of the hair follicles and the pigmented patch at one operation by electrodesiccation. Not only is this method conservative, but the cosmetic results are as good as those of any other method, if not superior to them.

Figure 7 *A* shows a pigmented hairy nevus which was destroyed by electrodesiccation under gas anesthesia at one operation. Suberythema doses of filtered roentgen ray were used in the treatment of the thickened scar. The final result is shown in figure 7 *B*. This photograph was taken about one year after the operation, at which time the scar was soft, pliable, smooth and flesh colored.

METHOD OF CHOICE IN TREATMENT OF DIFFERENT TYPES OF NEVI

Clinical types of angioma embrace nevus flammeus (port wine mark), nevus vasculosus (strawberry mark), and angioma cavernosum (cavernous angioma).

Nevus Flammeus.—This type of angioma is of variable size, unelevated, and red, dark red or purple. The use of the roentgen ray and radium is not to be recommended in its treatment. Only a few writers have reported good results in treatment with the beta rays of radium. The possibility of injuring the skin when radiation is employed in therapy is too great for this method to be of practical use. This type of nevus is the only one in which the ultraviolet ray is of any value. It is applied by means of a water-cooled mercury quartz lamp with pressure. Unfortunately, not all cases respond to this treatment. In those cases in which treatment is successful, it becomes possible to remove the lesion without scarring.

Refrigeration may be of value in treatment, particularly if the lesion is small. Scarring always results. If the lesion is large, treatment is prolonged, the scar is likely to be uneven, and the skin is unevenly colored. In the treatment of large lesions it is questionable whether refrigeration yields better cosmetic results than destruction by electrodesiccation.

Nevus Vasculosus.—This is a red elevated lesion of variable size. Both the roentgen ray and radium are of value in its treatment. When first degree reactions are avoided and treatment is not too frequent, the beta rays of radium yield such excellent results that irradiation is generally conceded the method of choice. A simpler, quicker and more economical method of treatment is destruction by electrodesiccation, which also yields good cosmetic results.

Angioma Cavernosum.—This type of angioma involves the deep vessels and is presented as a variable sized tumor. Although the roentgen ray has been

Fig. 8.—Lymphangioma circumscriptum. Previous treatment with the roentgen ray was of no avail. The growth was destroyed by electrodesiccation under gas anesthesia.

employed with good results, radium in most instances is the treatment of choice. For superficial lesions the beta rays are employed, and for deeper lesions the gamma rays. In selected cases, surgical procedures may give good results. The lesion may also be destroyed by electrocoagulation. The selection of this method would be particularly influenced by the location of the angioma.

Nevus Araneus (spider nevus).—This lesion is characterized by a central red spot, from which fine blood vessels radiate like the spokes of a wheel. Electrolysis or electrodesiccation may be employed. Treatment of the central area usually results in disappearance of the entire lesion.

Nevus Pigmentosus.—The choice of treatment in this lesion has already been discussed.

Nevus Pilosus.—This type consists of a circumscribed tuft of hair unassociated with pigment, in an area normally free of hair. There are three methods of permanently removing the hair: electrolysis, electrodesiccation or epilation with the roentgen ray. The latter is disadvantageous because of the likelihood of a radiodermatitis as a sequela of such treatment. Electrolysis would probably be the method of choice. Proper technic is required to avoid scarring. Electrodesiccation is a quick and effective method, but of course scarring would result.

Nevus Verrucosus.—This type of nevus is warty, and either soft or hard. In size and outline it varies from a small circumscribed lesion to grotesque masses, as shown in figures 1, 2 and 3, or it may occur as streaks (nevus linearis).

Fig. 9.—Result of treatment of lymphangioma circumscriptum as evidenced about two years later. The scar was soft and pliable and was not treated with the roentgen ray. A slight recurrence of the lesion may be seen.

Nevus Papillomatosus.—This is a soft papillary growth having frequently an offensive secretion.

Nevus Lipomatodes.—These nevi are fatty tumors and diffuse fatty infiltrations. In the treatment of these nevi, the high frequency current offers more advantages than any other method. The employment of electrodesiccation, electrocoagulation or the endotherm knife would depend on the size of the lesion, as already shown.

Lymphangioma Circumscriptum (lymphangiectodes).—This condition consists of various sized patches of deep seated, closely aggregated vesicles which represent dilated or newly formed lymph capillaries. The roentgen ray and radium have been successfully employed. Considerable treatment may be required, which constitutes a hazard. Since destruction of the lesion is quickly and effectively accomplished by electrodesiccation, I regard it as the method of choice.

Figure 8 shows a patient with lymphangioma circumscriptum. In places the lesion was moist and crusted, and secreted an offensive discharge. Previous treatment with the roentgen ray by a competent roentgenologist had been of no avail. Under gas anesthesia, the lesion was destroyed by electrodesiccation. The final result is shown in figure 9. The scar was smooth and pliable, and was therefore not treated with the roentgen ray.

1934 Spruce Street.

LOCAL ANESTHESIA IN THE REDUCTION OF FRACTURES OF THE LOWER FOREARM

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MINNEAPOLIS

Local anesthesia was first used for the reduction of fractures in 1885 by Conway.[1] He reported three cases of Colles' fracture and one of posterior dislocation of both bones of the elbow reduced under cocaine anesthesia with good results. Then Lerda,[2] in 1907, and Quénu,[3] in 1908, injected cocaine into the fragmented ends so that the bone marrow, periosteum and surrounding tissue were infiltrated. They reported favorable results and recommended its use more extensively. In 1913, Dollinger[4] and Braun,[5] working independently, reported having used procaine hydrochloride anesthesia both by local infiltration around and into the fragments of the bone and by circular conduction anesthesia. Both these men were of the opinion that the circular conduction method was the better, but recognized certain advantages of the local infiltration method, as in fractures of the clavicle and ribs, in which a nerve block could not be accomplished. They obtained excellent results and were of the opinion that the dangers of infection, as suggested in the infiltration method, were not to be feared. In 1921, Fulton[6] used the principle of local infiltration, using 1 per cent procaine hydrochloride solution with 1 drop of epinephrine to 10 cc. In the same year Hagenbach[7] used the principle of conduction anesthesia in fractures of the extremities, obtaining very satisfactory results. Frostell,[8] in 1925, used 1 per cent procaine, injecting from 3 to 20 cc. directly into the fracture gap. In 1926, Ira Cohen[9] used procaine anesthesia according to the local infiltration method, injecting between the fragments, around them and into the surrounding muscles. He obtained excellent results in all his cases and recommended it as a very practical procedure, especially in ambulatory cases.

In view of the experiences of these men, it is evident that the use of local anesthesia in the reduction of fractures is by no means a new procedure, nor is

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2. Lerda, G.: Die fraktische Anwendung der Lokal Anästhesie bei Frakturen (Practical Use of Local Anesthesia in Fractures), Zentralbl. f. Chir. **34**: 1417-1430, 1907.
3. Quénu: De l'anesthesie locale par la cocaine dans la réduction des fractures (Local Anesthesia with Cocaine in the Reduction of Fractures), Bull. et mém. Soc. de chir. de Paris **34**: 976-981 (July 22) 1908
4. Dollinger, B.: Ueber die Reposition der Bruchenden in Lokalanästhesie (Reduction of Fracture Ends Under Local Anesthesia), Zentralbl. f. Chir. **40**: 763-764, 1913.
5. Braun, H.: Die Anwendung der Lokalanästhesie zue Reposition subakutaner Frakturen und Luxationen (The Use of Local Anesthesia in the Reduction of Subcutaneous Fractures and Luxations), Deutsche med. Wchnschr. **39**: 17-18 (Jan. 2) 1913.
6. Fulton, R. A. H.: Local Anesthesia in the Reduction of Fractures, Brit. M. J. **2**: 796 (Nov. 12) 1921.
7. Hagenbach, E.: Die Anwendung der Lokalanaesthesie bei der Behandlung der Extremitätenfrakturen (Local Anesthesia in the Treatment of Fractures of the Extremities), Schweiz. med. Wchnschr. **51**: 488-490 (May 26) 1921.
8. Frostell, G.: Lokalanästhesie und Frakturbehandlung (Local Anesthesia in the Treatment of Fractures), Zentralbl. f. Chir. **52**: 1308-1309 (June 13) 1925.
9. Cohen, Ira: Local Anesthesia in the Reduction of Fractures, J. A. M. A. **86**: 1896-1897 (June 19) 1926.

it used as extensively as its simplicity and practical application should warrant. This article has been written in hope that the rational value of this method may be brought before the profession and that its use may be more generally accepted and practiced in the future.

Fractures of the lower forearm are, no doubt, the most common of all fractures. In this day and age, with "kicking" automobiles and the numerous industrial hazards, a fracture of the forearm is almost a daily occurrence in a large emergency ward or in the office of an industrial surgeon. At any rate, these fractures are sufficiently numerous to warrant special attention in consideration of the patient's feelings and in obtaining the best end-results with the least amount of hazard and discomfort to the patient.

The induction of local anesthesia in fractures of the lower forearm is so simple that its use can easily be adopted without additional expensive equipment and with only the ordinary aseptic precautions which can be carried out in any physician's office.

INDICATIONS

There are several indications in which local anesthesia is more desirable than a general anesthetic. An accident has no particular predilection for the time at which it occurs and, as often as not, the patient's stomach may be full or partially full, providing additional hazards for general anesthesia. In fact, general anesthesia presents the same contraindications to its use in fractures as it does in any other condition in which anesthesia is a desirable feature. Therefore, in all these cases, local anesthesia is the anesthetic of choice.

Another especially desirable feature of local anesthesia is the fact that very often the fracture is not completely reduced on the first trial, and in that case the cast can be removed and the fracture remanipulated until the satisfactory result is obtained. When a general anesthetic has been given, it is too often the tendency to consider the first reduction good enough, usually because of the dread of further anesthesia, whereas in procaine anesthesia this objection is automatically overruled and the arm can be remanipulated without the least fear of causing the patient further discomfort.

The only contraindications to its use are in compound fractures or in the presence of a recent infection in the extremity.

ANATOMY

A detailed knowledge of anatomy and the exact location of nerves and blood vessels is not essential in order to carry out the procedure with perfect satisfaction, because there are no important structures encountered through this approach.

A cross-section through the lower part of the forearm reveals that the radius is prismatic, with the dorsal border or the apex of the prism located most superficially. This dorsal border can be easily palpated subcutaneously above the wrist joint. From this ridge slope the medial and lateral surfaces, ending more or less abruptly in the interosseus and lateral borders, respectively. From the lateral border of the radius, which is also quite easily palpated above the radial artery, the ventral surface extends as a flat plane to meet the interosseus border. This represents the base of the prism.

Thus from two points a needle can be directed so as to circumscribe the radius completely. From the dorsal border there are no structures that can be injured by a needle prick, and from the lateral border it is evident that the radial artery and median nerve lie too low to interfere with a needle directed from this point.

PROCEDURE

In the receiving ward of the Minneapolis General Hospital, it has been my privilege to treat about one Colles' fracture a week. For the past eight months I have used procaine anesthesia in the reduction of these fractures in every case regardless of age or sex, and in every case the results have been very gratifying.

A sterile tray is prepared containing iodine, alcohol, a small 2 cc. hypodermic syringe with one ordinary hypodermic needle and one long 2½ inch 26 gage needle, two sterile towels and a few gauze sponges. The arm is first cleansed with soap and water, and then sterilized with iodine and alcohol. One sterile towel is placed over the hand, the other over the forearm, leaving a space of about 2½ inches exposed at the site of the fracture. The initial subcutaneous wheal is then made approximately 1 inch above the fracture over the subcutaneous dorsal border of the radius; 2 cc. is injected subcutaneously between this point and a point opposite the lateral border of the radius, where the second subcutaneous wheal is made. The small needle is then replaced by the long flexible one. This is

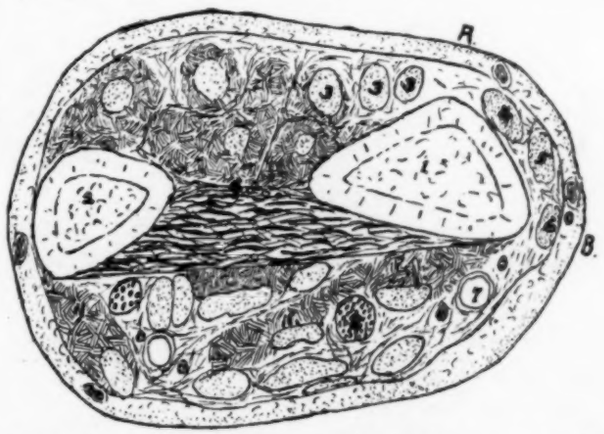

Fig. 1.—Cross-section of forearm at level of Colles' fracture: 1, radius; 3, tendon of extensor digitorum communis; 4, tendon of extensor carpi radialis brevis; 5, tendon of extensor carpi radialis longus; 6, tendon of brachioradialis; 7, radial artery; 8, median nerve; 9, interosseus membrane; *A*, point of first injection; *B*, point of second injection.

directed straight down to the dorsal border, and the tissues are injected as it progresses. It is then directed along the medial surface of the radius, and infiltrations are made into or as close to the periosteum as possible and continued until the needle is felt to go through the resistant interosseus membrane. The needle is then rerouted without being withdrawn and the lateral surface of the radius is infiltrated similarly until the lateral border is reached. Thus two sides of the prism-shaped radius have been infiltrated through one puncture. The needle is then withdrawn and a second puncture made opposite the lateral border, which has already been anesthetized. From this point the needle is directed across the ventral surface of the radius in one straight line, and the third surface of the bone completed.

During the infiltration, blood may well up into the syringe. This is the extravasated blood from the fractured bone, and can be readily differentiated from arterial or venous blood by its dull, faded out appearance and also by the fact that it will continue to rise in the syringe after the needle is inserted farther or withdrawn. If blood is not encountered, the needle is

directed forward toward the fracture until blood wells into the syringe. About 4 or 5 cc. is then injected at this point in order that the procaine hydrochloride may reach the fragmented ends of the bone and the endosteum.

Thirty minutes is then allowed for the anesthesia to take effect.

The amount of procaine hydrochloride used in these cases ranged from 15 to 60 cc. The smaller amount is fully as satisfactory and does not obscure the landmarks as much. The larger amounts were used in a few of the first cases. At times, the patient may complain of a sensation of pressure as a result of the infiltration, but with ordinary precautions no actual pain will be experienced. The fracture can then be reduced by the usual method.

RESULTS

The ease of reduction is almost miraculous. It is not necessary to use the old time honored block-and-tackle methods so often seen in which the physician braces his feet and then pulls until he perspires. An undue amount of trauma is being added whenever it becomes necessary to use force in the reduction. All that is required is a gentle firm grip on the hand, and

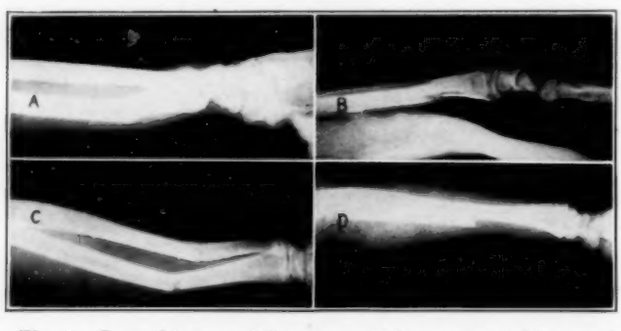

Fig. 2.—Greenstick type of fractures, which are corrected by merely bending the fragments back. No traction is required. The pain in these is, however, no less evident. Anteroposterior views are not shown. They do not demonstrate anything further. *A*, case 1 before, *B*, after; *C*, case 2 before, *D*, after.

the fragment can then be moved back and forth without any difficulty whatever. The relaxation of the muscles has been very satisfactory, and in not a single case has it been necessary to exert more than a few pounds' traction and only ordinary pressure with the thumb over the distal fragment as it is pushed into place. Even under general anesthesia it is often necessary to use more force than has been employed with local anesthesia.

In a few of the cases a sensation of pressure was felt over the wrist as the distal fragment was pressed down, but when the same amount of pressure was applied to the normal wrist it was shown that this pressure was comparable to that on the uninjured side. These patients stated definitely that there was no pain. Some noted a grating sensation as the bone "snapped into place"; others did not note any sensation during the entire procedure. The injured wrist has been manipulated and handled as a routine before anesthesia was induced, and in each case the expression, complaints and actual statement of the patient have verified the fact that pain was definitely eliminated or sufficiently reduced so that manipulation could be done without pain.

Although there is a theoretical possibility of infection in this procedure, it is my opinion that this objection is practically negligible. The field is cleansed and sterilized with iodine and alcohol. Sterile instruments are used and only two punctures are made. There has not been any case of infection or any indication which could lead me to suspect that there might have been any. However, I do not consider the danger of infection as great as the danger of inhalation pneumonia or asphyxia with general anesthesia, which is no small item when the patient has eaten only a few hours previously and is then given a general anesthetic to be accompanied with or followed by vomiting, gagging and coughing.

In the past year I have treated more than fifty cases of fracture of the lower end of the forearm, using procaine anesthesia in every one. This method is now being used as a routine in the receiving ward of the Minneapolis General Hospital for all fractures of the lower forearm. With two exceptions the results have been satisfactory and very gratifying. The two exceptions were cases in which procaine had been used on the previous day. In both cases the fracture had been satisfactorily and painlessly reduced with the first attempt, but on subsequent examination the fragments were found to have slipped back, leaving the original deformity. The failure to obtain adequate anesthesia a second time in these cases was not due so much to the lack of anesthesia in the fragments as to the inability to obtain satisfactory relaxation and to the soreness and tenderness throughout the muscles of the forearm. It cannot be considered that these examples represent a failure of the method, but rather a contraindication to the use of local anesthesia. The following cases are illustrative of a few of the typical types of fractures encountered:

REPORT OF CASES

CASE 1.—R. S., a man, aged 21, admitted, April 7, 1927, had been injured while cranking a car, receiving a marked backward bowing of the forearm. He was having considerable pain. Roentgen-ray examination revealed a transverse fracture of the distal end of the radius and of the styloid process of the ulna with a moderate anterior angulation at the site of fracture of the radius and with the fragments in very good apposition. Twenty-five cubic centimeters of 1 per cent procaine hydrochloride was infiltrated in the usual manner and fifteen minutes allowed for the anesthesia to take effect. The fracture was then reduced without pain and with only a slight sensation of pressure as the bone was pushed into place with the thumbs. Relaxation was satisfactory. A roentgenogram taken after reduction showed the angulation completely corrected and the fragments in excellent alinement.

CASE 2.—M. V., a boy, aged 11, admitted, June 21, 1927, had sustained an injury from a fall on his hand. There was a very marked posterior bowing of the forearm, and roentgen-ray examination revealed a fracture of the distal third of both the radius and the ulna somewhat of the greenstick type, with marked anterior and some lateral bowing at the site of fracture. Pain was definite on slight manipulation. Forty-five cubic centimeters of 1 per cent procaine solution was infiltrated about the fragments of the radius and ulna by the usual method, forty-five minutes being allowed for the anesthesia to take effect. The fracture was then reduced and board splints were applied. There was absolutely no pain experienced during the reduction. Roentgen-ray examination after reduction showed the ulna in excellent position, but there was a marked backward displacement of the distal fragment of the radius and some medical displacement of it. Although the radius was not replaced as accurately as might have been possible, the anesthesia was perfect and in no way interfered with the reduction. The bones have healed satisfactorily, leaving perfect function and no apparent or external deformity of the forearm. Roentgen-ray examination, however, still revealed the displacement of the radius, but well healed.

These two cases represent the types of fracture in the shafts of the bone which tax one's ingenuity and skill to the limit. They often require a great deal of manipulation, for as often as not when one bone is placed in position the other slips out, and vice versa. The advantages of procaine anesthesia in these cases are evident.

CASE 3.—F. M., a man, aged 49, admitted, July 3, 1927, sustained an injury to his right wrist from a fall while roller skating. There was only a slight deformity represented by a backward bowing at the wrist. Manipulation of the wrist was very painful. Roentgen-ray examination revealed a transverse fracture of the distal end of the radius and also of the styloid process of the ulna, with a moderate posterior displacement of the distal fragment of the radius and a definite silver-fork deformity of a moderate degree. Sixty cubic centimeters of 1 per cent procaine was infiltrated in the usual manner, thirty minutes being allowed for the anesthesia to take effect. The wrist was then manipulated and the fracture reduced without pain. Relaxation was perfect. Roentgen-ray examination after reduction showed the fragments in excellent position with only slight anterior and lateral displacement.

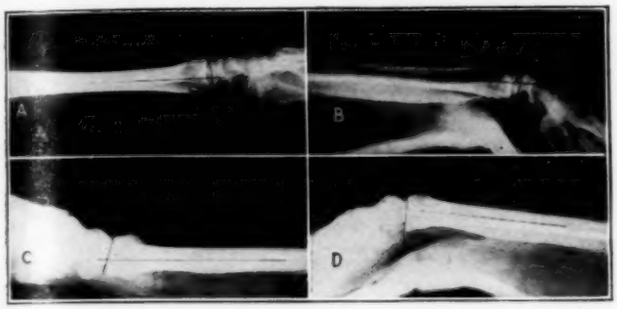

Fig. 3.—Typical Colles' fractures, after reduction, may often present no external evidence of deformity, but if viewed in the roentgenogram the angle of the articular surface with the shaft of the radius may still show a backward inclination. This angle must be more than 90 degrees. *A*, case 3 before, *B*, after; *C*, case 4 before, *D*, after.

CASE 4.—W. W., a man, aged 46, admitted, August 2, 1927, had sustained an injury to his left wrist four days previously while on a vacation. An attempt at reduction had been made without anesthesia and board splints applied. He presented himself to me for a check-up on the position. Roentgen-ray examination revealed a transverse fracture of the distal end of the radius with moderate posterior displacement of the distal fragment. The patient was a police officer and not inclined to complain unnecessarily, but stated that there was considerable pain during manipulation of the forearm. Forty-five cubic centimeters of 1 per cent procaine with 1 drop of epinephrine per drachm was then infiltrated about the fragment in the usual manner, and thirty minutes was allowed for the anesthesia to take effect. The fracture was then reduced painlessly and without difficulty. Roentgen-ray examination then showed that there was only a slight posterior displacement of the distal fragment and that the position was very good. Relaxation was perfect.

Cases 3 and 4 represent the typical Colles' fracture. Under proper anesthesia these fractures are easily reduced but are sometimes inclined to slip back, especially if the dorsal surface is somewhat comminuted or if it is an epiphyseal separation. Unless the angle of the articular surface with the shaft of the radius is beyond a right angle, the bones cannot be considered properly replaced. The normal angle ranges between 100 and 105 degrees (fig. 3). These cases may not present much external evidence of deformity; but, if allowed to heal with an angle of less than 90 degrees as evidenced in the roentgen ray, there is apt to be some limitation of flexion and impairment of strength owing to the shortening of the muscles.

CASE 5.—E. R., a boy, aged 9, admitted, July 18, 1927, had fallen on his right hand, sustaining a marked deformity of the right forearm. He suffered a great deal of pain. Roentgen-ray examination showed a transverse fracture of the distal end of the radius with complete posterior and slight lateral displacement of the distal fragment. An attempt had been made the day before by another physician to reduce the fracture without anesthesia, but this had been unsuccessful. Thirty cubic centimeters of 1 per cent procaine containing 1 drop of epinephrine per drachm was infiltrated about the fractured radius in the usual manner; thirty minutes was allowed for the anesthesia to take effect. The fracture was then manipulated without pain and a molded splint was applied. A recheck with the roentgen ray showed still some deformity. The fracture was then remanipulated under the fluoroscope, the deformity corrected and a molded splint applied. A roentgenogram then revealed the fragments of radius in excellent position with only slight anterior and lateral displacement. The patient did not complain of any pain whatever and was glad that he did not have to take gas, which had previously been an unpleasant experience. Repeated manipulations in this case were definitely indicated, and without the aid of local anesthesia it would have been extremely embarrassing to subject this patient to general anesthesia each time the arm was manipulated. Under procaine anesthesia, three repeated manipulations were done without causing the patient any discomfort and served to indicate to the parents our sincerity in endeavoring to obtain the best possible result in what appeared to them from the grotesque deformity to be a very bad fracture.

CASE 6.—F. W., a man, aged 25, admitted, July 27, 1927, had injured his right wrist while cranking a car. There was a definite silver fork deformity, and the patient complained of a great deal of pain and tenderness on manipulation. Roentgen-ray examination revealed a transverse fracture of the distal end of the radius with a marked posterior displacement and angulation of the distal fragment. Forty-five cubic centimeters of 1 per cent procaine with 1 drop of epinephrine per drachm was infiltrated in the usual manner, thirty minutes being allowed for anesthesia to take effect. The fracture was then reduced without pain, and the patient stated that there was only a slight sensation of tension and pressure as the wrist was manipulated. Relaxation was perfect. A roentgenogram taken after reduction showed that there was only a slight posterior displacement of the distal fragment and that the position was very good.

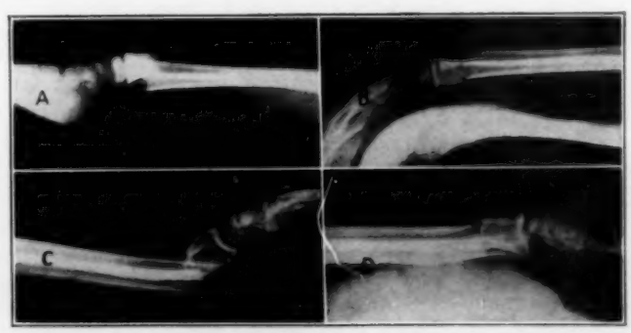

Fig. 4.—Transverse fracture of the distal end of the radius with complete overriding or extensive angulation. These are often difficult to reduce but, when once reduced, are quite easily held in place. *A*, case 5 before, *B*, after; *C*, case 6 before, *D*, after.

CASE 7.—N. G., a youth, aged 19, admitted, Sept. 16, 1927, had sustained an injury to his right wrist from a fall on the hand. He had been seen in the emergency ward at the Minneapolis General Hospital the evening before admission, at which time procaine anesthesia was induced by the physician in charge and the fracture reduced without pain. Roentgen-ray examination on the following morning showed "a complete posterior and slight lateral displacement of the epiphysis of the distal end of the radius." The epiphysis had apparently slipped back out of place. The forearm was then infiltrated with 30 cc. of procaine in the usual manner, thirty minutes being allowed for the anesthesia to take effect. An

attempt was then made to reduce the fracture but this was unsuccessful. The patient stated that he still retained some sensation of pain in the wrist and forearm on manipulation, although it was somewhat lessened. Repeated trials at reduction were unsuccessful. There was apparently no relaxation of the muscles, as it was impossible to pull the fragments apart. Gas anesthesia was then resorted to and the fracture reduced.

It is my opinion that the soreness and edema throughout the muscles of the forearm were the cause of the lack of relaxation. A more recent and similar case in which there was definite roentgen-ray evidence that the fracture slipped back after being once reduced gave a similar reaction.

CONCLUSIONS

Anesthesia with procaine hydrochloride can be safely and satisfactorily used in the reduction of fractures of the lower end of the forearm.

The technic can be carried out without additional equipment and without a detailed knowledge of anatomy.

Relaxation of the muscles is satisfactory.

The danger of infection is negligible.

Procaine anesthesia should not be used in the presence of infection, in a compound fracture, or when it has been used only a short time previously.

AURICULAR FLUTTER

REPORT OF A CASE OF FIVE YEARS' DURATION WITH SPONTANEOUS RESTORATION OF NORMAL RHYTHM *

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AND
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Auricular flutter is a relatively infrequent disorder of the heart beat. It very rarely lasts more than a year or two and when it is prolonged it tends to change to auricular fibrillation or to terminate fatally. A remarkable exception that has come to our notice is the reason for the present report.

A suggestion of the incidence of auricular flutter may be gained by a comparison of the figures of the electrocardiograms taken in the cardiographic laboratory of the Massachusetts General Hospital during the past thirteen years. These comprise records taken on cardiac patients in the house and outpatient departments, research tracings, and those taken on private patients of our own and of other physicians. Up to Dec. 3, 1927, 13,978 electrocardiograms had been taken on 8,600 patients. Auricular flutter has been recorded in only seventy-two patients. During this period, 947 cases showed auricular fibrillation.

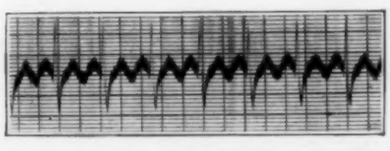

Fig. 1.—Lead II: auricular flutter with 2:1 rhythm; auricular rate, 240; ventricular rate, 120. In all electrocardiograms scale on the abscissa is 0.2 second and on the ordinate, 10^{-4} volt.

Auricular flutter is sometimes persistent and difficult to treat, as the circus movement in the auricle may become fixed. The heart may not return to normal rhythm for weeks, months or years. A search of the literature, however, has not revealed a case having the duration of the one here reported, in which spontaneous return to normal rhythm occurred after five years.[1]

REPORT OF CASE

E. D. J., a machinist, aged 49, first seen in the cardiac clinic of the Massachusetts General Hospital, July 24, 1924, and admitted to the ward for study, stated that two years before, while running for a car, he suddenly felt his heart begin to beat very rapidly and had a sensation of being choked. Ever since that time his heart had continued to beat fast. At the time of the onset of this condition he was in his usual good health but rather tired.

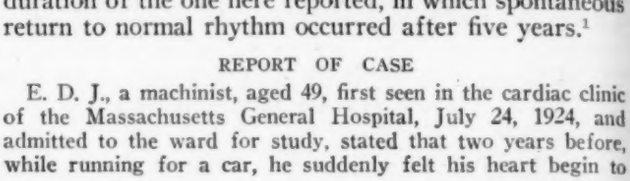

Fig. 2.—Lead II: auricular flutter with 1:1 rhythm; auricular and ventricular rates, 200+; regular alternation in height of Q-R-S waves.

Two months after the onset he had his first attack of what he called "flutter" or "boiling over" of the heart. These attacks were initiated by mild exertion and consisted of a very rapid regular tachycardia lasting a few minutes or hours. This recurred frequently in relation to exertion or emotion or even to change of position. He later was able to stop such attacks at times by holding his breath in full inspiration. On one occasion the sudden onset of the rapid rate made him drop to the floor; if he persisted in his activity he had severe epigastric pain. He had been unable to work since his heart had begun to beat rapidly, and he complained of palpitation and indefinite abdominal distress with much "gas" and "indigestion." He did not have any dyspnea, orthopnea, edema or cough. He was moderately comfortable when quiet about the house, except during periods of very rapid tachycardia.

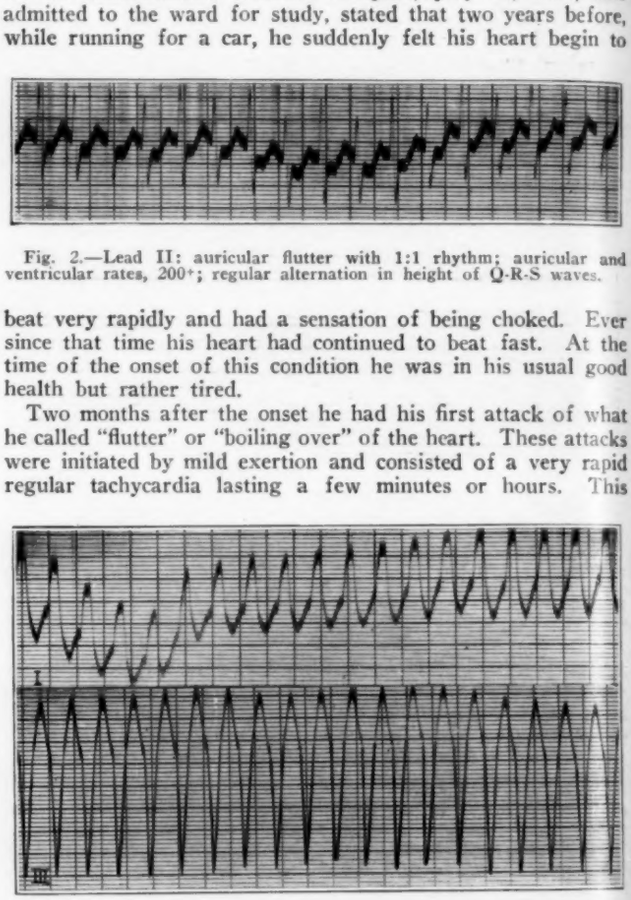

Fig. 3.—Leads I and III: auricular flutter with 1:1 rhythm and aberrant ventricular complexes from intraventricular block of the right bundle branch type; rate, 240. (The Q-R-S complexes in lead III have been retouched in order to show the amplitude of the string deflection more clearly.)

The past history was negative except for scarlet fever at the age of 2 years, a hemorrhoidectomy eleven years before admission, and attacks of scotoma and hemivision, which had been called "migraine."

The conditions found on physical examination were essentially unimportant. The patient was rather thin and had a small hydrocele. The heart did not seem enlarged, the sounds were of good quality, and there were no murmurs. The rate was usually about 120. The blood pressure was 100 mm. of mercury systolic and 76 diastolic. Examination of the blood, urine, renal function, Wassermann reaction and blood nonprotein nitrogen gave normal results. The basal metabolic rate was —9 per cent.

* From the Cardiac Clinic of the Massachusetts General Hospital.

1. Parkinson and Bedford (Quart. J. Med. **21**: 21 [Oct.] 1927) have reported a case of twelve years' duration with continuous flutter and eventual death.

Roentgenograms showed a slight increase in the transverse diameter of the heart, with some increase in the width of the supracardiac area and torsion of the aorta. The outline and excursion of the diaphragm were normal and the costophrenic sinuses were clear. These observations suggested some arteriosclerosis. The measurements were as follows: median right, 4.3 cm.; median left, 8 cm.; total transverse diameter, 12.3 cm.; length, 12 cm.; great vessels, 7.5 cm.; internal thoracic diameter, 22 cm.

The electrocardiogram showed auricular flutter with 2:1 auriculoventricular block; the auricular rate was 240; the ventricular, 120 (fig. 1). After exercise or excitement the block suddenly decreased to 1:1 with both auricles and ventricles beating at over 200 (fig. 2). Forced inspiration increased the block to 2:1. On another occasion, after exercise, 1:1 block was produced with a ventricular rate of 240 with aberrant complexes (fig. 3). At times, exercise resulted in alternation in the height of the Q-R-S complexes. Digitalis in large doses increased the grade of block to 3:1 (fig. 4), and possibly at

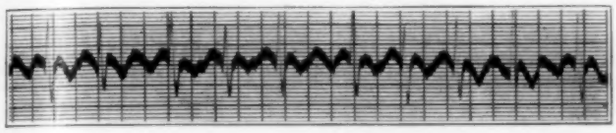

Fig. 4.—Lead III: auricular flutter with varying block 2:1 and 3:1; auricular rate, 280; ventricular rate, from 110 to 120.

times to 4:1. Ectopic ventricular contractions have also been recorded.

While in the hospital the patient was given at first digitalis (digitalis leaf, 1.6 Gm. in four days) and after an interval of seven days quinidine (quinidine sulphate, 30 grains [2 Gm.] daily for five days) without effect on the rhythm but with pronounced toxic effects from each course. He was discharged unrelieved.

The patient has been frequently seen during the past three years since his stay in the hospital. On each occasion, until this year, auricular flutter has been found and confirmed by repeated electrocardiograms. He has continued in about the same condition. On only one occasion a slight edema of the ankles was noted. Attacks of very rapid rate have at times incapacitated him and have come with varying frequency from every few weeks to several times a day. The usual rates of the "slower" type, with 2:1 block, have been auricular, 240, ventricular, 120. Vagal pressure has frequently increased the block temporarily.

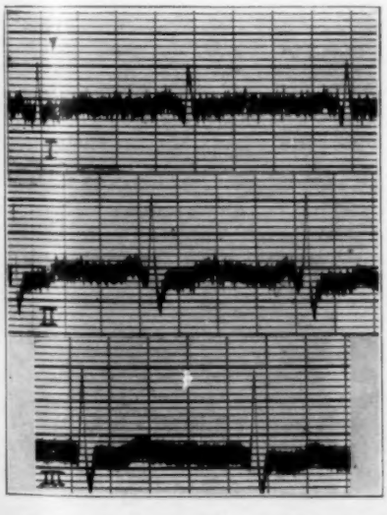

Fig. 5.—Leads I, II and III: normal rhythm; rate, 75. In order to assure satisfactory reproduction of this tracing it was not reduced to the same extent as the others which appear with this article.

Digitalis has been given most of the time at a maintenance dose, after digitalization, of 1½ grains (0.1 Gm.) of the powdered leaf daily. At attempt to convert the flutter into permanent brillation by larger doses (up to 5.5 Gm. in two weeks) was unsuccessful. The grade of block was increased, the ventricular rate falling briefly to below 90, but the drug had to be discontinued because of nausea and visual disorders.

He was last seen, Dec. 1, 1927, having been absent from the clinic for seventeen months. During this time he had been taking 1½ grains (0.1 Gm.) of digitalis a day until Nov. 11, 1927. On that day, for no known reason, the heart suddenly resumed its normal rhythm. With this came great relief of the symptoms, only some muscular weakness remaining. When examined in the clinic the patient looked fairly well. The apex impulse of the heart was in the fifth space 8 cm. to the left of the midsternum and inside the midclavicular line. The left border of dulness agreed by percussion. There was no abnormal dulness to the right of the sternum or at the base. The apex rate was 76 and regular. The sounds were of good quality, and there were no murmurs in the upright or recumbent positions. The blood pressure was 130 systolic and 75 diastolic. The electrocardiogram showed normal rhythm, a rate of 75, and low T waves in all leads (fig. 5). He was advised to take from 6 to 9 grains (0.4 to 0.6 Gm.) of quinidine sulphate daily for a few weeks as an extra precaution against the return of the arrhythmia.

SUMMARY

In a case of persistent auricular flutter lasting five years, and unchecked by digitalis or quinidine in full dosage, the flutter finally stopped abruptly for no known reason. No evidence of heart disease was discovered. Not infrequently during the course of the flutter the ventricular rate followed the auricular, without block, at from 240 to 260 beats a minute; at such times palpitation and weakness were distressing.

270 Commonwealth Avenue.

LACTOSURIA IN NURSING WOMEN

ITS DETECTION BY A SIMPLIFIED BACTERIAL METHOD

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NEW ORLEANS

For many years it has been noted that in the urine of a certain number of nursing women there is a Fehling reducing substance, generally believed to be lactose. Thanks to the kindness of Drs. C. J. Miller and E. L. King, in charge of the gynecologic and obstetric wards of Charity Hospital, and of Dr. T. B. Sellers and Dr. C. D. Dawson of the Southern Baptist Hospital, I have been able recently to investigate the subject. The details of the investigation will be given in a future publication; in this paper I shall limit myself to stating briefly the results I have come to and the method I have used.

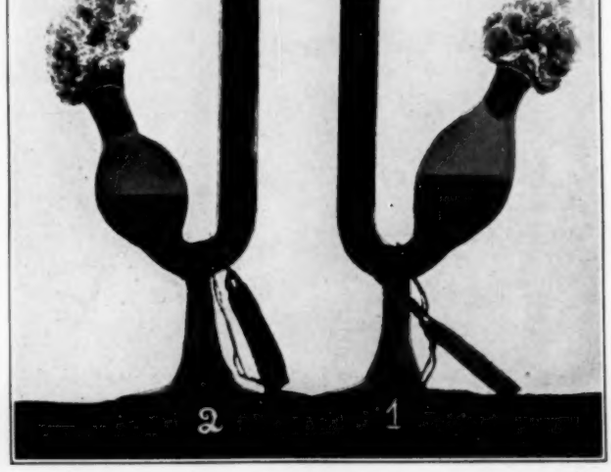
LACTOSURIA

Next to dextrose, lactose is the commonest sugar found in the urine. Lactose, as is well known, reduces Fehling's solution, and not infrequently lactosuria has been mistaken for true glycosuria. It is most important to distinguish between the two conditions, as lactosuria is not serious, while glycosuria, especially in nursing women, may be of grave prognosis. The chemical detection and identification of lactose is difficult for an ordinary medical man. Lactose, as is well known, reduces Fehling's solution and is dextrorotatory like dextrose. It yields mucic acid on oxidation with nitric acid, but this occurs also with galactose. The only chemical specific test is the formation of the characteristic lactosazone with phenylhydrazine, but unfortunately this occurs in a very partial and unsatisfactory manner in the presence of urine; in fact, as a rule the lactosazone is never readily formed in urine. In most textbooks it is stated that, for practical purposes, if a

urine reduces Fehling's solution and is not fermented by ordinary bakers' yeast, the presumption is that the reducing substance is lactose. There are, however, two important sources of error.

First, a number of specimens of bakers' yeast ferment lactose in addition to dextrose, maltose and other sugars. In London more than 15 per cent of specimens of fresh bakers' yeast do so, and there are pure cultures of yeast fungi that will ferment lactose (for instance, *Monilia pseudotropicalis*). Second, even if the bakers' yeast should not ferment lactose, this is not the only substance that reduces Fehling's solution, which may not be fermented by bakers' yeast; pentose, for instance, is also not fermented. If a urine which reduces Fehling's solution is not fermented by ordinary yeast, it cannot, therefore, be concluded that the condition is lactosuria.

A general mycologic method for the detection and identification of a number of sugars, including lactose and various alcohols, was devised by me some years ago in Ceylon and worked out later in London in conjunction with Dr. F. E. Taylor.[1] It is now generally known as the Castellani-Taylor method, and a fairly full description of it was given recently.[2]



Fermentation tubes used for detecting lactose in urine: Tube 1, containing Bacillus coli, shows the presence of gas; tube 2, containing Bacillus paratyphosus B, shows the absence of gas.

METHOD RECOMMENDED

The various ways in which the so-called Castellani-Taylor mycologic method can be carried out with regard to the identification of lactose may be found in my joint paper with Dr. F. E. Taylor.[2] The following is briefly the simplified technic I have found most useful in practice. The urine is collected in a clean bottle or other clean vessel, if possible sterile, although this is not essential; if it cannot be examined at once, it can be kept for some hours or even a day or two in the icebox.

A portion of the urine is boiled for two minutes, as I have found that boiling for two minutes does not apparently alter the chemical structure of lactose in the urine; it is then distributed into two fermentation tubes, labeled 1 and 2. As soon as the urine has cooled down, tube 1 is inoculated with two or three large loopfuls of *B. coli* from an agar culture; tube 2 is inoculated with *B. paratyphosus* B in the same way. The two tubes are placed in the incubator at 35 to 37 C. for from twelve to twenty-four hours. The results are then read. If tube 1 (*B. coli*) shows the presence of gas and tube 2 (*B. paratyphosus* B) does not show the presence of gas, the inference is that the urine contained lactose.

The explanation is as follows: With regard to Fehling reducing sugars which may be found in the urine—viz., dextrose, levulose, maltose, galactose and pentose—*B. coli* and *B. paratyphosus* B ferment the same sugars except one, lactose, which is fermented by *B. coli* and not by *B. paratyphosus* B. If a Fehling reducing sugar therefore is fermented by *B. coli* and not by *B. paratyphosus* B, the inference is that it is lactose. Strains of *B. coli* and *B. paratyphosus* B should be used that have approximately the same degree of fermentative power on the sugars they ferment.

The test may be employed also as a roughly quantitative test, graduated fermentation tubes being used.

If both tubes show fermentation there are several possibilities: as a rule the sugar is dextrose, but it may be levulose or galactose or maltose or pentose or a mixture of them, or it may be one or several of the sugars mentioned plus lactose. It will suffice to say here that if it is suspected that lactose is present in addition to some other Fehling reducing sugar, the urine is exhausted with *B. paratyphosus* B and after filtration through a Chamberland filter is inoculated with *B. coli;* if fermentation takes place the inference is that lactose was present in addition to some other Fehling reducing sugar.

CONCLUSIONS

1. During January and February of this year, I was able to study twelve nursing women whose urine reduced Fehling's solution. In most of the cases the reaction was slight and disappeared after a few days. The bacterial method showed that in every case the Fehling reducing substance was lactose; no dextrose or any other sugar apart from lactose was present.

2. The simplified bacterial method for the detection of lactosuria is quite easy and may be satisfactorily carried out in any ordinary bacteriologic laboratory.

I shall be pleased to supply workers interested in the subject with the strains of *B. coli* and *B. paratyphosus* B that I use.

1551 Canal Street.

1. Castellani, Aldo; and Taylor, F. E.: The Mycological Detection and Determination of Certain Carbohydrates and Other Carbon Compounds in Pathological Work, Brit. M. J. **2**: 855 (Dec. 29) 1917.
2. Castellani, Aldo; and Taylor, F. E.: Fallacies of the "Yeast Method" of Detecting Glucose in the Urine: Further Observations on a Mycologic Method to Identify Various Sugars and Other Carbon Compounds, J. A. M. A. **86**: 523-527 (Feb. 20) 1926.

Hospital Statistics in Last Five Years.—Considerable change has occurred in the number of certain types of hospitals. The orthopedic hospitals increased from thirty-seven to sixty-two in the past five years; the eye, ear, nose and throat hospitals, from fifty-eight to seventy-seven; industrial hospitals, from seventy to 168; convalescence and rest hospitals, from 137 to 159. At the same time there has been a decrease in maternity hospitals from 262 to 178; children's, from eighty-one to fifty-eight; skin and cancer, thirty-two to sixteen. The number of nervous and mental institutions stands about stationary, but shows a growth in patronage, having at present a capacity of 373,364 beds of which 349,667 are constantly occupied. The general hospitals of the country outnumber all other types of institutions combined, there being 4,322 general hospitals with a capacity of 345,364 beds and occupied on an average by 228,084 patients. During the past five years the total number of hospital beds has increased 11.5 per cent. In the same time the patients have increased 21.4 per cent. The total bed capacity of hospitals is being increased at the rate of about 20,000 beds per year.

HEALTH OF THE SELF-SUPPORTING COLLEGE STUDENT *

R. W. BRADSHAW, M.D.
College Physician
OBERLIN, OHIO

The college health service offers peculiar opportunities for the effective practice of preventive medicine. The health of a particular student group may be found to differ markedly from that of another group. A study of the environment and activities of the group will often bring to light the factors which contribute to the excessive illness of the group. At Oberlin the health of the self-supporting student seemed to warrant investigation.

The desire for a college education is not confined to the class who can easily afford this luxury. Many young men and women throughout the country in families in which there can be no place in the budget for the several thousand dollars required for collegiate training are willing and anxious to undertake the task of earning their way through four years of college.

A small percentage of these ambitious students with what they earn in work in the college dining halls, in college offices, from the care of furnaces, in odd jobs and in summer work accumulate enough to defray four years of college expense completely, while others secure a portion of their budget from their family or friends. Some of the self-supporting students excel in scholarship, athletics and general campus popularity. Others are little heard of in college, but after graduation they achieve signally successful careers and present to the world and their alma mater a distinctly enviable record. By and large, however, the self-supporting student must pursue a more rigorous routine throughout his college days than his non-self-supporting colleague. The present-day college course requires the full time of the average student, and the self-supporting student must forego some of the so-called outside activities of college life and actually do more work than his independent classmate. His daily program has in it more of routine. He has more responsibilities, and he has less opportunity to indulge in the common irregularities of collegiate life. He undoubtedly suffers more from the effects of fatigue than his financially care-free colleague.

The general effect of the student's collegiate experience on his future is profound, and a discussion of the advantages or disadvantages of a college education obtained in an atmosphere of financial independence opens up interesting problems, to be sure, but the present study is primarily concerned with the question, "How does the health of the self-supporting student compare with the health of the remainder of the student body?"

I have endeavored to answer this question at Oberlin by a detailed study of the complete health records of the entire student body. The study does not include the records of the more than thirty students who withdrew from college on account of ill health.

The Student Health Service files contain the records of all illness occurring in the student body, regardless of what physician treats the case, in which the disease is of sufficient severity to require the hospitalization of the student for one day or more. In addition to this, the files contain the records of a very large percentage of the total ambulatory illness occurring in the student body during the college year. These records were used in compiling the data concerning the amount of illness occurring in the various groups studied.

The list of the names of the self-supporting students was secured through the assistance of those interested in and in charge of student employment and from the students themselves. In addition to the group classed as self-supporting there are many students who only sporadically supplement their finances with earnings from various sorts of work and are not in this study included in the self-supporting group.

The 1,673 students, exclusive of those in the Graduate School of Theology, entering Oberlin College in September, 1926, and continuing throughout the year, constitute the group in which the study was made. Forty per cent of these (676) were men and 60 per cent (997) women. Four hundred and twenty students, 25 per cent of the student body, were partially or wholly self-supporting.

Chart 1.—Number of clinic visits per thousand students.

During the period under consideration, no disease reached serious epidemic proportions, and the health of the student body, by and large, was good. As a basis for estimating objectively the health of the groups studied, three factors were considered: (1) the number of visits to the student clinic for consultation and treatment made by members of the group; (2) the number of upper respiratory infections, such as colds and tonsillitis, occurring in the group, and (3) the number of days spent in the hospital or infirmary as bed patients by the members of the group. I believe the last factor to be perhaps the most reliable of the three.

AMBULATORY ILLNESS

Of the 420 self-supporting students, 306, or 73 per cent, made 1,202 visits to the student clinic for consultation and treatment. This represents a rate of 2,862 clinic visits per thousand of self-supporting students. Of the 1,253 independent students 697, or 56 per cent, made 2,515 visits to the clinic, which represents a rate of 2,007 visits per thousand of non-self-supporting students. The self-supporting students from this point of view therefore suffered from 43 per cent more illness than the independent group.

Chart 2.—Number of upper respiratory tract infections per thousand students.

UPPER RESPIRATORY INFECTIONS

The commonest types of illness among college students are the acute infections of the upper respiratory tract, including the common cold, tonsillitis, acute bronchitis, and influenza. In the group of 420 self-supporting students there occurred 250 upper respiratory infections sufficiently severe to bring the student to the health service for treatment. In the group of 1,253 non-self-supporting students, there were only 546 similar infections, the former giving a rate of 595 per thousand and the latter 436 per thousand. That is, the self-supporting group suffered from a 36 per cent higher incidence of such respiratory infections as colds during the year than the non-self-supporting group.

* From the Student Health Service, Oberlin College.

HOSPITAL ILLNESS

Perhaps the best criterion by which to judge the health of the Oberlin College student is the total number of days he is confined as a bed patient to the hospital. It should be remembered that at Oberlin College, as well as at other educational institutions where the preventive factors of medical treatment are emphasized, a higher percentage of the illness is hospitalized than is possible in the average general population group of this age distribution (17 to 24), and because of the hospital facilities at Oberlin there is more complete hospitalization of illness among women than among men. Analysis of our statistics shows that per thousand the self-supporting group spent 1,269 days in the hospital, while the rate per thousand for the other

Chart 3.—Number of hospital days per thousand students.

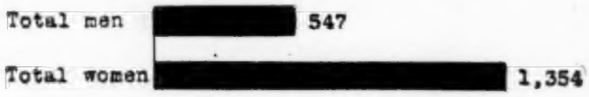


Chart 4.—Number of hospital days per thousand students.

group was only 947. The self-supporting group, then, spent 34 per cent more time in the hospital than the independent group.

It is interesting in this connection to compare our ratio of male and female illness with the ratio found by Sydenstricker[1] in Hagerstown morbidity studies (chart 5).

When the main groups are divided into subgroups of self-supporting men and self-supporting women, even more striking differences in the health records become evident.

Chart 5.—Incidence of illness from all causes in the age group from 15 to 24 (Sydenstricker): rate per thousand.

The 233 self-supporting men spent 153 days in the hospital, a rate of 657 per thousand, while the self-supporting women (187) spent 380 days in the hospital, a rate of 2,032 per thousand, or more than two days

Illness Among Oberlin College Students, 1926-1927

	Total Number	Colds, etc.	Rate per 1,000	Clinic Visits	Rate per 1,000	Days in Hospital	Rate per 1,000
Self-supporting men	233	138	592	758	3,253	153	657
Self-supporting women	187	112	599	444	2,374	380	2,032
Independent men	443	264	596	1,288	2,907	217	490
Independent women	810	282	348	1,227	1,515	970	1,197
Total self-supporting students	420	250	595	1,202	2,862	533	1,269
Total independent students	1,253	546	436	2,515	2,007	1,187	947
Total men	676	402	595	2,046	3,027	370	547
Total women	997	394	395	1,671	1,676	1,350	1,354

per person and more than 300 per cent of the time spent by the self-supporting men. When the two groups of women are compared, one finds that 810 non-self-supporting women spent 970 days in the hospital, representing 1,197 days per thousand. This is only 59 per cent of the time spent in the hospital by an equal number of self-supporting women.

A study of the accompanying table will make evident other interesting comparisons, all of which point to the same conclusion.

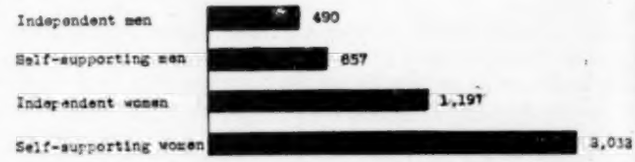


Chart 6.—Number of hospital days per thousand students.

CONCLUSION

1. The financially handicapped student who earns his way through college may be of greatest value to the world and himself.
2. His work, his recreation, his environment and his emotional outlook differ from those of his financially independent colleagues.
3. An analysis of the health records of Oberlin College students for the year 1926-1927 shows a significantly higher percentage of illness among all groups of self-supporting students than in the corresponding financially independent groups.
4. The factors contributing to the increased morbidity of the self-supporting groups should be studied in detail with a view to reducing the illness in these groups.

1. Sydenstricker, Edgar: The Illness Rate Among Males and Females, Pub. Health Rep. **42**: 1939 (July 29) 1927.

THE URINE IN PATIENTS SUSPECTED OF HAVING AN INFECTION IN THE URINARY TRACT

FREQUENT DISCREPANCY BETWEEN EXAMINATION OF FRESH SPECIMENS AND BACTERIAL CULTURES *

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NEW HAVEN, CONN.

Infections of the urinary tract probably form the largest group of lesions treated by the urologist. Despite this fact, not many physicians actually determine whether or not an infection is present. In the majority of instances the "specimens are sent for culture" and implicit faith is placed in the returned bacteriologic report.

My purpose in this article is to call attention to the frequent discrepancies between the examination of the freshly obtained urine and the culture reports.

For a number of years it has been customary in the department of urology at the New Haven Hospital to stain the centrifugalized sediment of freshly obtained urine and to examine the smear with the oil immersion lens to determine the presence or absence of epithelial cells, white blood cells and organisms (noting then their morphologic character), in addition to carrying out the routine examination for sugar, albumin and red blood cells. The method here described has been found satisfactory for this purpose:

METHOD OF COLLECTING THE SPECIMEN

After the cystoscope has been introduced into the bladder, some urine is allowed to escape; a second portion is collected in a sterile test tube and the third portion is collected in another sterile test tube. The end of each test tube is flamed and stoppered with a

* From the Department of Surgery, Yale University School of Medicine.

sterile cotton pledget. Two specimens are collected from each kidney in a similar manner, the first (as the bladder specimen) to be used for making an immediate smear, the second to be sent to the department of bacteriology for culture.

In obtaining the ureteral specimens, two important points in technic are observed. First, a sterile tooth pick is always used to plug the open end of the catheter before the catheter is introduced into the bladder and ureter. This serves two purposes: It gives the assistant a handle to hold on to so that he does not touch the sterile catheter, and, more important, it prevents the bladder contents from entering the catheter. In that way, one lessens the chances of carrying organisms and pus directly into the renal pelvis and also of finding organisms and pus, which in reality come from the bladder, in the ureteral specimens. Secondly, in collecting the specimens for culture the end of the sterile test tube is flamed, as is the lower 6 or 8 cm. of the ureteral catheter. I have found that flaming the lower end of the catheter does very little harm to it and is far more satisfactory than the more common practice of wiping the end off with an alcohol sponge.

METHOD OF EXAMINATION OF THE SPECIMEN

When the specimens of urine have been collected, one set is sent to the bacteriologic laboratory for culture, while the other is used for immediate examination in the cystoscopic room.

In the bacteriologic laboratory the routine method is carried out of making cultures of urine in broth and then transferring the broth culture to whatever solid medium is thought necessary.

In the cystoscopic room the routine procedure is to examine the bladder urine for albumin and sugar and to determine its reaction and specific gravity. The specimens from the bladder and the right and left ureters are then centrifugalized and the sediment is examined microscopically. Before each specimen is centrifugalized, 2 or 3 cc. of concentrated nitric acid is poured into the centrifuge tube to destroy any organic material present. This is then rinsed out about six times with sterile water. The urine is now poured into the test tube prepared in this way and allowed to centrifugalize for from three to five minutes at a high speed. After centrifugalization the supernatant urine is all poured off, and with a flamed platinum loop the sediment is stirred up and transferred to a new glass slide (which has been kept in alcohol). The smear is fixed by heat, stained with methylthionine chloride and examined under the oil immersion lens. In the stained smear one looks for the presence or absence of cocci or bacilli or both and notes their morphology, as well as for white blood cells and the various types of epithelial cells. The observations are noted on the chart and later compared with the bacteriologic report.

A second specimen of the sediment is examined wet under a cover slip with the high-dry lens, chiefly to determine the presence or absence of red blood cells and casts.

STATISTICAL STUDY

In the last 182 specimens of urine examined in this way, the observations in the freshly stained smears agreed with those in the bacteriologic cultures in only 116 instances (i. e., 64 per cent), whereas they differed in the remaining sixty-six instances (36 per cent). In other words there was a discrepancy in slightly more than a third of the specimens examined.

The accompanying table will help to illustrate these observations.

From this table it can be seen that in direct smears in which no organisms were seen the bacteriologist reported positive growths of *B. coli* fourteen times; *Staphylococcus aureus,* sixteen times and nonhemolytic streptococci, three times. In smears in which bacilli were seen only four times, the culture showed *Staphylococcus aureus,* whereas cultures were reported negative when bacilli were actually seen, sometimes quite abundantly in eighteen smears, and cocci in thirteen smears.

It does not seem probable that in smears carefully examined without organisms being seen these organisms

Comparison of Observations in Smears and in Cultures

Smear	Culture Report				
	B. Coli	B. Proteus	Staph. Aureus	Nonhemolytic Streptococcus	No Growth
Bacilli	46 times	5 times	4 times	0 times	18 times
Cocci	0	0	9 times	7 times	13 times
No organisms.	14 times	0	16 times	3 times	48 times

would be missed in 45 per cent of all the smears reported negative, but that is actually what has happened. It is almost as surprising to note that, of all the cultures reported negative, bacilli were seen in the direct smear in 24 per cent of instances and cocci in 16 per cent of instances; that is, organisms were actually seen in the direct immediate smears of 40 per cent of the specimens of urine in which the cultures of the same urine were reported as not showing any growth.

COMMENT

How can this tremendous discrepancy be explained? There are several possibilities, and one of the most obvious is that the patient has been taking some urinary antiseptic that has made the urine either bactericidal or, what is more likely, bacteriostatic. Methenamine is an excellent example of this kind of drug, as may be inferred from a remarkably good piece of experimental work done by Helmholz and Field.[1] They studied the therapeutic value of mercurochrome, methenamine and hexylresorcinol in cases of experimental urinary infection in rabbits. In practically all their animals they were able, after giving a sufficiently large quantity of methenamine, to obtain "sterile cultures" from specimens of urine, and in most of the animals the cultures remained "sterile" until the animals were killed and examined at necropsy. At autopsy there was always much evidence, both gross and microscopic, of active infection, which means that the urine must have contained both pus organisms in spite of the negative culture reports. As to the animals in which the urinary tract infection was due to *Staphylococcus albus,* the authors say: "Considering the size of the abscesses present in the kidney at necropsy it is remarkable that the urine should have been sterile at any time." Very remarkable, indeed, but direct smears of the urine would have indicated the extent of the infection which the culture did not reveal. Yet many urologists and others are satisfied with the report of the bacteriologist.

In the urines in which no organisms or polymorphonuclear leukocytes were seen in the smears and yet the cultures were reported positive, several factors are to be borne in mind. First, the patient may have been having a bacteriuria without any actual infection. Second, the pus cells and organisms may have been so few that they were not seen in the smear. Third, which is probably the more common difficulty, the culture may

1. Helmholz, H. F., and Field, R. S.: J. Urol. 15: 351 (April) 1926.

have become contaminated either while the specimens were being collected or afterward.

SUMMARY

Staining the centrifugalized sediment of urine freshly obtained under aseptic precautions is, in each case, a very necessary adjunct in determining the presence or absence of infection in the urinary tract.

The results of bacteriologic cultures of specimens of urine failed to check with the observations in the stained smears of the centrifugalized sediment of the same specimens in more than a third of those examined.

The apparent cause of the discrepancy between the two types of examination may be due to: (1) ingestion of bactericidal or bacteriostatic drugs; (2) the possibility of contamination of the specimens during collection, or (3) carelessness in examining the stained smears of the freshly obtained urine.

CONCLUSION

It is evident from this study that the urologist should make a greater effort to correlate the clinical observations and the immediate study of the urine with the culture report from the bacteriologist if he is interested in accurately determining his patient's status.

THE EFFECT OF PREVIOUS ADMINISTRATION OF ANTITOXIN AND TOXIN-ANTITOXIN ON SERUM REACTION*

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In order to determine the effect of therapeutic and immunizing doses of serum and immunizing doses of toxin-antitoxin on subsequent serum injections, a study was made of a series of 237 patients with diphtheria and scarlet fever who received antitoxin at the Willard Parker Hospital, New York. The histories were thoroughly gone into, the parents of the patients were interviewed, and information as to previous serum treatment of any kind was particularly noted. The patients were carefully followed up from the time of admission until discharge, and any serum reaction observed was taken note of.

Of the 237 patients interviewed (171 with diphtheria and sixty-six with scarlet fever), 164 gave a history of never having had any serum injections; forty-five, of having had a therapeutic dose of some form of protective serum previous to the present illness, and twenty-eight of having been immunized with diphtheria toxin-antitoxin.

Of the 164 patients giving a history of not having received any previous serum injections, twenty-two (13.4 per cent) had a serum reaction. Of the twenty-two, three were marked reactions consisting of skin eruption, pruritus, elevation of temperature, intestinal disturbances, and, in two cases, arthralgia; there were two immediate reactions and one delayed reaction, lasting from twenty-four to forty-eight hours. Nineteen patients had mild reactions, consisting of urticarial rash, pruritus and elevation of temperature, occurring from two to eleven days after the antitoxin was administered and lasting for from twenty-four to forty-eight hours.

Of the forty-five patients who gave a history of having had antitoxin previous to the present illness, eight (17.8 per cent) had serum reactions, none severe. Two reactions were immediate and six delayed.

The twenty-eight patients who gave a history of having been immunized with diphtheria toxin-antitoxin all had scarlet fever, and four (14.3 per cent) gave serum reactions as follows:

CASE 1.—A white girl, aged 8 years, received 30 cc. of antiscarlatinal serum intramuscularly. Ten days later a rash appeared on the chest and abdomen; no rise in temperature or other symptoms were noted.

CASE 2.—A white girl, aged 2 years, received 10,000 units of diphtheria antitoxin. Nine days later an urticarial rash appeared on the face, arms and neck, with itching. It was relieved by epinephrine.

CASE 3.—A white girl, aged 2 years, received 30 cc. of antiscarlatinal serum intramuscularly. Two days later a few spots of erythema appeared on the back. Three weeks later the patient received 10,000 units of diphtheria antitoxin. This was followed by an immediate rise in temperature, from normal to 103.8 F. The thighs, at the points of injection, were swollen and painful. There was no other reaction.

CASE 4.—A white girl, aged 7 years, received 30 cc. of antiscarlatinal serum intramuscularly. Seven days later redness and slight swelling appeared at the point of injection. There were no other symptoms.

It is interesting to note that none of the patients with diphtheria gave a history of having had toxin-antitoxin.

CONCLUSIONS

Previous injection of antitoxin, if not recently given, seems not to affect future serum administration markedly, as almost as large a percentage of serum reactions occurred in patients not having received previous antitoxic globulin injections as in those so treated.

Of the few patients with marked serum reaction, none happened to have received antitoxin prior to the present illness, while those patients with a history of previous antitoxin, when exhibiting a serum reaction, had it in a mild or moderate form.

Previous administration of toxin-antitoxin appears to have little or no effect on subsequent serum treatment. Only four of the twenty-eight patients in this series who gave a history of having been immunized against diphtheria with toxin-antitoxin had a serum reaction. This is only a small series of cases, but it seems to prove that toxin-antitoxin does not sensitize to future serum injections to such an extent as to produce any appreciable effect. The fact that these patients all had scarlet fever suggests the value of toxin-antitoxin, as persons once immunized against diphtheria with toxin-antitoxin are usually protected against that disease. The force of this is somewhat lessened by the fact that the patients with diphtheria were on the average younger than those having scarlet fever.

The reason for the comparatively mild type of serum reactions may be the method of treatment. Each

Effect of Previous Administration of Antitoxin and Toxin-Antitoxin on Serum Reaction

	Total	Giving No Serum Reaction	Giving Serum Reaction	Percentage
Number of patients interviewed...	237	203	34	14.47
Number of patients giving a history of not having received injections of any kind previous to present illness.....	164	142	22	13.41
Number of patients giving a history of having received antitoxin previous to present illness	45	37	8	17.78
Number of patients giving a history of having received toxin-antitoxin previous to present illness	28*	24	4	14.28

* All of these were patients with scarlet fever.

* From the Research Laboratories of the Department of Health.

patient was tested for horse serum sensitivity. Those giving a marked positive test were given the antitoxin in small, divided doses, at fifteen minute intervals. Epinephrine, either alone or in conjunction with atropine, was promptly administered to counteract any serious reaction. In this way general serious reactions were reduced in degree.

The concern of those clinicians who believe that the administration of serum for therapeutic and prophylactic purposes or the use of toxin-antitoxin is accompanied with grave danger of sensitization to subsequent administration of serum is greatly exaggerated. That the minute amount of horse serum in the toxin-antitoxin mixture is capable of sensitizing to subsequent injections of antitoxin is exceedingly doubtful, and to assume that toxin-antitoxin induces hypersensitivity, one must first prove that a greater percentage of those having had toxin-antitoxin develop serum reactions after a later dose of serum than those not having had toxin-antitoxin. This has not been my experience, and I have not seen any comparative figures from others.

UMBILICAL DISPLACEMENT AND DEVIATION OF LINEA ALBA IN ACUTE ABDOMINAL CONDITIONS *

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Oppenheim [1] described a dislocation of the umbilicus toward the sound side in unilateral paralysis of the abdominal wall (the mechanism is presumably similar to the drawing of the mouth toward the sound side in facial paralysis). Schlesinger,[2] in 1921, described a sign which he called "die Nabelverziehung," occurring in certain cases of prepyloric ulcers and acute cholecystic disease. This is a transient displacement of the umbilicus toward the affected side when the patient is made to press downward as at stool, with a return to its normal position in a few seconds.

We have encountered a physical condition that bears some resemblance to both Oppenheim's and Schlesinger's sign. It is a prolonged displacement of the linea alba and the umbilicus to the affected side with skin surface disturbances in the form of folds and creases on the side to which the linea alba and the navel are drawn. In its relative permanence it resembles Oppenheim's sign and differs from Schlesinger's observation, which is really a test and not a sign.

Our attention was called to this sign by the following case:

REPORT OF CASE

A. B., a man, aged 73, admitted, Sept. 11, 1927, because of epigastric pain, vomiting and belching of fourteen months' duration, stated that for the last six weeks vomiting had occurred every evening, the vomitus consisting of undigested food. Physical examination revealed emaciation with evidences of peripheral arteriosclerosis. The abdomen was held tense and the skin was lax, and there was some tenderness over the epigastrium about the umbilicus and below the right costal margin.

Roentgenograms showed a large penetrating ulcer defect on the lesser curvature and posterior wall high up on the cardia. There was a large amount of fluid in the stomach. The defect was exquisitely tender on palpation. There was almost complete retention.

While waiting for operation, the patient developed a sudden severe pain in the right upper quadrant. A short while later he was in collapse; the pulse was 104 and weak, the temperature 96.4 F., and the respiration 52. The knees were held flexed. The abdomen was scaphoid and boardlike, rigidity being more pronounced on the right side than on the left. The umbilicus was drawn to the right, 1 inch away from the median line, with a corresponding curvature in the linea alba. There were two large transverse skin creases just superior to the umbilicus, and many small wrinkles distributed diffusely on the right side of the abdomen. The changes in the position of the umbilicus and the linea alba were best seen from the foot or the head of the bed. At operation, a perforated lesser curvature ulcer was found. When the dressings were changed on the third day, the umbilicus and linea alba had returned to their normal position and the skin folds and wrinkles had disappeared.

COMMENT

Since then we have seen the phenomenon in the following conditions: (1) active duodenal ulcers, four cases; (2) one case of penetrating lesser curvature ulcer, near the cardia, in which the deviation was toward the left; (3) acute appendicitis, four cases.

These patients have all been followed until the structures came back to the median line, either postoperatively or after the painful period had passed. Our experience coincides with that of Schlesinger, who says that the sign disappears with the disappearance of the painful interval.

When one considers the anatomic relations of the linea alba and the umbilicus, the explanation of this phenomenon is obvious. The umbilicus is located in the median raphe made by the decussation of the fascial fibers of the rectus sheaths. The sheaths, in addition to enclosing the rectus muscles, are reinforced by tendinous slips from such powerful muscles as the obliquus externus, the obliquus internus and the transversus abdominis. This raphe, the linea alba, is represented on the surface by a pigmented line in the nonhairy abdomen, and by the parting of the hairs in the hairy abdomen. It may be likened to a bowstring, anchored above to the ensiform cartilage and inferiorly to the symphysis pubis. A difference in the tension of the two sides of the abdomen would tend to draw the linea alba, and with it the umbilicus, toward the side of greater rigidity. The skin surface changes are due to an effort of the skin to accommodate itself to the contracted underlying surface.

Our cases among the women were in nulliparas. It is doubtful whether this sign can be observed in the fat, the multiparous or the pendulous abdomen.

The following points must be emphasized:

1. The sign is best seen from the head or the foot of the bed.

2. The side toward which the displacement occurs is the side of greater rigidity as determined by palpation.

3. This sign cannot be relied on in abdomens with postoperative scars. A new scar may pull the umbilicus toward itself, while an old stretched scar may allow the navel to be pulled away to the opposite side.

4. From a careful study of this sign-complex one may often make a diagnosis of unilateral rigidity or of a difference in rigidity by inspection as well as by palpation. In some cases it may be an aid in the localization of a disease condition.

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* From the Alfred A. Strauss Surgical Service and the Medical Service of the Michael Reese Hospital.

1. Oppenheim, H.: Text Book of Nervous Diseases, T. N. Foulis, 1908, pp. 24 and 25.

2. Schlesinger, H.: Die Nabelverziehung bei Ulcus ventriculi und anderen abdominal Affectionen, Wien. klin. Wchnschr. 34: 1 (Jan. 6) 1921.

THORACIC PAIN PERSISTING AFTER CORONARY THROMBOSIS

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That attacks of angina pectoris may cease after the occurrence of coronary thrombosis has been pointed out by McKeen [1] and by Wolff and White.[2] This is probably explained by the fact that the branch of the coronary which, by its narrowed condition, was responsible for pain on an increased demand for function of the heart, is obliterated by the thrombosis. After obliteration of the vessel by a thrombosis there is an infarct of that part of the heart muscle which it supplies and, if the patient survives, this is followed by scar tissue replacement. The infarct or the scar is physiologically inactive and increased physiologic demand on the heart does not result in the attacks of angina pectoris to which the patient was previously subject, unless other coronary branches are involved.

On the other hand, we believe that it is not uncommon for patients who have suffered coronary thrombosis to be subject for varying periods to a type of thoracic pain which is distinguishable clinically from the ordinary picture of angina pectoris and which is of somewhat different significance. Wearn,[3] in a study of coronary thrombosis published in 1923, describes a patient who several months after a coronary occlusion complained of a dull ache over the precordium which became worse on exertion and was uninfluenced by glyceryl trinitrate. Pardee [4] refers to this type of pain in the course of his paper on heart disease and abnormal electrocardiograms. This pain is variable in severity and location. It may be merely a sense of pressure or it may be actual pain, though usually not severe. It is felt beneath the sternum, to either side of the sternum or in the precordium. It seldom radiates to the neck or arms. It sometimes occurs in immediate response to exercise or emotion but later is apt to be slower in appearing, coming on with fatigue, typically toward the end of the day. It is not relieved by glyceryl trinitrate but is promptly relieved on lying down.

Among our twenty-three patients with coronary thrombosis, twelve survived the first attack. Among these twelve patients there were four who complained of this type of pain for various periods of time. A brief report of these cases follows.

REPORT OF CASES

CASE 1.—A man, aged 48, a physician, married, had had recurrent spells of hunger pain shown by the roentgen ray to be due to duodenal ulcer, and eleven years previously had fractured the seventh rib just below the heart. He had been lame and sore in this region on one or two occasions since then, and at one of these times an electrocardiogram was taken which showed rather low amplitude of the R wave with relatively high T waves.

In January, 1927, he was one of three members of his family to suffer from a sharp attack of diarrhea and fever. This lasted two or three days. Two days later he was still feeling somewhat weak. In the course of the day he had four short attacks of pain in the sternum and left arm, coming on while walking in the snow and passing off on resting. The next morning at 6 o'clock he was awakened by severe pain in the sternum and left arm. The pain was unrelieved by glyceryl trinitrate, which caused a considerable reaction with faintness and sweating. The patient vomited immediately after a drink of whisky. The pain subsided after a hypodermic injection of morphine, but recurred on the slightest movement, returning with considerable violence and radiating into the jaw and both arms some hours later. It was again controlled by morphine but returned early the next morning, after which morphine was used as a routine for four or five days. There was a slight fever for several days, the maximum temperature being 101.8 F. The leukocytes were increased to 14,000. The blood pressure was 110 systolic and 80 diastolic the morning of the attack, and rose to 140 systolic and 95 diastolic later. No friction rub was ever heard. An inconstant split first sound was noted and occasional extrasystoles. A week later an electrocardiogram showed a flattening out of the T waves in leads I and II.

Two weeks later while the patient was shaving himself he was seized with a sudden violent pain in the third right interspace anteriorly, the chest wall in this region becoming very tender. The painful condition lasted about twenty-four hours and was interpreted as an embolism in the chest wall.

For weeks after the onset of the illness there was a sensation of soreness in the middle of the thorax; that is, pain was readily elicited by turning to one side or to the other or by pressure from an accumulation of gas, immediately relieved when the gas was brought up. From the start, after a certain amount of exertion, either physical or mental, there was felt a sensation of pressure beneath the sternum, going on to actual pain if carried too far. As the months went by, the tolerance to effort was gradually extended. The patient to some extent disregarded this effort pain, although too great an infringement invariably resulted in a definite curtailment of the field of response for several days. The substernal discomfort appeared regularly toward the end of the day and at times much earlier. It would invariably disappear on lying down but was unaffected by glyceryl trinitrate. During the summer the patient was under the care of Dr. David P. Barr of St. Louis, who noted that the splitting of the first sound at the apex was always heard when the patient was suffering substernal discomfort and was not heard at any other time. An electrocardiogram taken soon afterward showed a normal curve before exertion. After exercise and smoking and while the patient was a little uncomfortable, T_2 showed a tendency to dip downward before rising to a higher amplitude than before, and T_3 became definitely diphasic.

A year after the thrombosis the patient still continues to experience substernal discomfort on very moderate exertion or slight fatigue.

The effort pain in this case seems fairly attributable to the infarct and resulting scar rather than to disease of other coronary branches. The fact that it began abruptly with the thrombosis (except for a twenty-four hour prelude) and that it was unaffected by glyceryl trinitrate makes this inference reasonable. The electrocardiogram taken during a pain was comparable to the records of temporary changes seen during an attack of angina pectoris by Feil and Siegel.[5] This suggests that there is some attempt at function in the affected area, which proves ineffective on further demand, a relative anoxemia developing as a result of increased activity, in the presence of a limited blood supply.

CASE 2.—L., a man, aged 56, married, a jobber, with an unimportant family and personal history, had never had any illness before except for several mild attacks of grip.

During the winter of 1923-1924 he noticed a slight tendency to breathlessness on climbing the stairs. In March, while walking in a snow storm, he became very short of breath, but continued his walk and climbed the stairs of the elevated railroad. Here he was seized with a violent pain beneath the

1. McKeen, S. F.: Coronary Occlusion in General Practice, Boston M. & S. J. **194:** 809 (May 6) 1926.
2. Wolff, L., and White, P. D.: Acute Coronary Occlusion, Boston M. & S. J. **195:** 13 (July 1) 1926.
3. Wearn, J. T.: Thrombosis of the Coronary Arteries, with Infarction of the Heart, Am. J. M. Sc. **165:** 250 (Feb.) 1923.
4. Pardee, H. E. B.: Heart Disease and Abnormal Electrocardiograms, Am. J. M. Sc. **169:** 270 (Feb.) 1925.
5. Feil, H., and Siegel, M. L.: Electrocardiographic Changes During Attacks of Angina Pectoris, Am. J. M. Sc. **175:** 255 (Feb.) 1928.

sternum. He went into a nearby physician's office and was given a hypodermic which enabled him to get home. The next day he felt very weak but got up and went out to a restaurant, where he ate a hearty meal. On returning to his home he vomited and became unconscious. He was unconscious for several hours. On recovering consciousness he had a feeling of oppression in the chest and some palpitation. During the next three days he had several spells of weakness with tachycardia and extreme cyanosis. He remained in bed six weeks. No records of examination are available until a period some two months later, when examination showed a normal blood pressure (146 systolic and 62 diastolic). The heart appeared normal except that the sounds were a little faint. There was slight thickening of the radials. An electrocardiogram showed a flattened T wave in leads I and II and a downward T wave in lead III. He had not been taking digitalis.

At this time he felt much improved but continued to experience a feeling of discomfort beneath the sternum if he walked too fast or got tired.

As the summer months passed he complained rather consistently of this substernal sensation and at times also of slight pain in the precordium and a feeling of "soreness" in the region of the apex. He continued at his work, which required considerable walking. In October the substernal sensation had increased in intensity to the point of pain and would radiate into the neck at times. It would come on with less exertion than formerly. He was kept in bed for a week and then gradually allowed to do more. There was considerably less pain, although it still continued to come on toward night. In February, 1925, occasional pain from the sternum across both sides of the chest was noted. In May, 1925, after an interval of practically no pain, it recurred, just to the left of the sternum from the second to fourth ribs, following exertion. On one occasion the pain was so severe that the patient had to stop walking. An electrocardiogram taken at this time showed the T wave up in I, diaphasic in II and down in III. In October, the patient reported that he had had pain only about once a week up to two weeks before. Since that time he had been having three or four attacks a day. By this time the pain was felt not only in the precordium and beneath the sternum but down the left arm.

Two years later, three and a half years after the abrupt onset of the thoracic pain, the patient reported that if he was hurried or excited he had pain in the precordium at about the level of the third or fourth rib just to the left of the sternum. Occasionally this pain came on while at rest, and had waked him up in the night. It usually would disappear if he lay down. He had had a few attacks of severe pain which were relieved by glyceryl trinitrate. This suggested that some other coronary branch was thickened and subject to spasm which was relieved by the drug. The last electrocardiogram shows a split P wave in II and III and a downward T wave in III.

There does not seem to be any reason to doubt that this patient suffered a coronary thrombosis. While a record of fever, leukocytosis or friction rub is lacking, the prolonged cardiac pain, coming on suddenly and accompanied by vomiting and collapse, is quite characteristic. The occurrence of negative T waves in leads I and II and their later return to the normal form corresponds to the changes in the electrocardiogram of dogs following the ligation of a branch of the left coronary, as described by Smith,[6] and to changes commonly seen in man following a coronary occlusion.

CASE 3.—A man, aged 41, married, a poultryman, had had diphtheria in 1914 and a period of indigestion with vomiting in 1921. His heart had been examined and pronounced sound a week before the onset of the present illness.

Sept. 20, 1927, while at work, he noticed that he was a little dizzy. This was shortly followed by a sensation of strangling so violent that he pulled on his tongue. He lapsed into unconsciousness and was said to be pulseless and pale. He was revived shortly and taken home and put to bed, where he complained of weakness, palpitation and shortness of breath. He did not feel any pain until about two hours after the onset of the attack, when he noted that something felt "wrong" under the sternum. This sensation persisted, becoming worse after a heavy meal, so that he cut down his diet to very light meals. The pain became worse when he was tired, and sometimes it would disappear if he brought up some gas.

The patient stayed in bed only two days. Then he got up and went back to work. The pain under the sternum continued to trouble him, and he was so short of breath on exertion that he had to go up the stairs very slowly. He also complained of nervousness and insomnia. He was first seen five weeks after the attack, when physical examination showed a tendency to obesity, a normal blood pressure (124 systolic and 88 diastolic), and a somewhat enlarged liver, but nothing else of note. An electrocardiogram taken six weeks after the onset showed only a left preponderance and a negative T_3.

He was seen again six weeks later, having spent a month in bed. At this time the pain was very much less, but he still had it at times. On occasions it would become quite severe and suddenly be entirely relieved by his bringing up some gas. When last seen, in March, 1928, he still complained of dyspnea and substernal pain on walking.

It has long been recognized that an attack of coronary thrombosis can be ushered in by a paroxysm of dyspnea rather than by pain. Wearn,[3] in his study of nineteen cases coming to autopsy, found four belonging to this category. In the case of the patient under consideration it is difficult to imagine any pathologic change which could possibly account for the symptoms, other than thrombosis in a branch of one of the coronaries. The electrocardiogram might have shown more amiss if it had been taken earlier, or it might not. We have seen a perfectly normal electrocardiogram in spite of the presence of a large cardiac infarct, as shown by autopsy soon after.

CASE 4.—L., a man, aged 47, a jeweler, whose previous health had always been good, was seized, Nov. 1, 1927, after dinner and a very hard day, with a sudden severe substernal pain radiating into the base of the neck. This lasted about an hour. He did not vomit but had some distress with eructations of gas. He became fairly comfortable and went to bed. The next morning, while attempting to take his car out of the garage, he had a similar though shorter and milder attack. Later that day and continuously since he had had substernal pain, described by him as an "ache" or "a viselike oppression," radiating as before into the neck but not to the arms, and induced by walking up a grade or against the wind.

Physical examination three weeks after this attack did not show anything of note. The pulse was 80, and the blood pressure, 120 systolic and 78 diastolic. An electrocardiogram showed T_3 negative, the S-T interval beginning on the descending limb of R, above the base line, and T_3 negative, with a fairly sharp point (dip) and with some upward convexity of the S-T interval, which also began on the descending limb of R.

He was put to bed for six weeks. At the expiration of this time an electrocardiogram was reported quite normal. He has continued, however, to complain of substernal distress on exertion.

COMMENT

Besides these four patients we have knowledge of several others who began to suffer from thoracic pain abruptly with the occurrence of coronary thrombosis and have continued to do so. Several in our own series complained of painful attacks both before and after coronary thrombosis, and, as stated previously, there are patients who suffer from painful attacks before a thrombosis and do not suffer from them afterward. The exact mechanism is not clear in the case of either type. It seems probable, however, that (1) in the case of those who have pain only after the thrombosis, the pain is due to the infarct or its scar; (2) in those whose painful attacks cease after a thrombosis, the pain is

6. Smith, F. M.: Electrocardiographic Changes Following Occlusion of the Left Coronary Artery, Arch. Int. Med. **32**: 497 (Oct.) 1923.

dependent on a narrowed coronary vessel, with intermittent vessel spasm probably superadded, and (3) in those who have painful attacks both before and after coronary thrombosis, both of these factors are involved, or else more than one coronary branch is sufficiently affected to be the cause of painful attacks.

BRUCELLA ABORTUS INFECTION IN MAN

REPORT OF SEVEN CASES *

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Evidence pointing to possible *Brucella abortus* infection in man was first presented by Larson and Sedgewick [1] in 1913. This possibility was emphasized by Evans,[2] who, in 1918, determined the close relationship between *Brucella abortus* and *Brucella melitensis*. The first case of undulant fever in America not traceable to infected goat's milk was reported by Keefer [3] in 1924. Carpenter,[4] in 1926, reported the first proved cases of undulant fever in man due to *Brucella abortus*. In these cases the infection was directly traceable to the use of milk containing virulent *Brucella abortus* organisms. Extensive bacteriologic studies of this organism were published by Huddleson,[5] and additional cases of infection in man were reported by Huddleson and Orr,[6] Belyea [7] and others. In spite of the fact that infection by this organism is widespread in the United States, relatively few cases have been reported in the literature. In many instances much of the clinical record is lacking, and very seldom has the diagnosis been made by clinicians. Our purpose in presenting this paper is to report seven cases of *Brucella abortus* infection in man and to point out the widely varied clinical phenomena observed.

REPORT OF CASES

CASE 1.—A man, aged 50, a surgeon, whose past history did not contain anything even remotely related to this illness, became ill, Sept. 15, 1927. The first symptom was persistent and distressing headache, present in the early morning and frequently lasting through the night. The pain was both frontal and occipital in location. There was also a mild occipital and a left brachial neuritis. Anorexia, profound exhaustion, chilliness, fever and sweats followed. There were no distinct rigors, but a very distressing chilliness accompanied any increase in temperature. The chilliness did not precede the fever, and existed only throughout the period that the body temperature was elevated. The temperature ranged from 98.2 to 103 F., was markedly undulant in type, and retraced much of the same pattern from day to day. It generally described two peaks in a twenty-four hour period, in each instance recurring at approximately the same hour. After each period of fever there followed a profuse and prostrating sweat. The pulse rate was only moderately increased. Nervous symptoms were present throughout the illness. Sleeplessness was a disturbing symptom. Restlessness and tension were present to such an extent when the temperature was elevated that the patient dreaded the return of the periods of fever because of the indescribable feeling of nervousness which accompanied them. Despite this fact, there was no tremor and no unusual body movement. An obstinate constipation existed, but there was no abdominal discomfort. The patient lost 17 pounds (7.7 Kg.) early in the illness, after which the weight was maintained. From the onset, the symptoms increased in intensity for approximately four weeks; then followed four weeks of most acute illness; then four weeks of gradual improvement, and later, intermittent periods of fever and discomfort. The distressing headaches disappeared after approximately eight weeks and recurred only slightly with elevations of temperature.

Examination revealed a striking absence of physical signs. No evidence of disease was found on examination of the head, throat, thyroid, heart and chest. The spleen and liver were not enlarged. There was no evidence of abdominal or pelvic abnormality, and no evidence of bone disease or joint changes. The skin and lymphatic glands were normal. Neurologic examination was negative, despite the patient's complaint of tension.

The urine was normal. Blood examination revealed 85 per cent hemoglobin, and erythrocytes 4,500,000 per cubic millimeter, normal in character. There was an initial leukocyte count of 3,000 per cubic millimeter, which had risen to 7,000 in two weeks. In each instance the differential count was normal. Later blood examination gave: hemoglobin, 90 per cent; erythrocytes, 5,000,000 per cubic millimeter. Repeated examinations of both fresh and stained specimens of blood did not show malaria parasites. Agglutination tests for *Bacillus typhosus* and *paratyphosus* B were negative; *B. paratyphosus* A agglutinated in 1:10 dilution early in the illness, but after one week agglutination was negative. Agglutination with *Brucella abortus* was positive in a dilution of 1:3,000 with both bovine and porcine strains. Agglutination with *Brucella melitensis* occurred in a dilution of 1:50. A blood culture, taken in approximately the fourth week of illness, yielded *Staphylococcus aureus*. The same organism was found in cultures of the urine. During this time the patient was suffering from an infected hair follicle in the anterior nares, from which *Staphylococcus aureus* was isolated. A second blood culture, taken in the sixth week of illness during the peak of fever, yielded four colonies of *Brucella abortus* together with colonies of *Staphylococcus aureus*. Guinea-pigs inoculated intraperitoneally with blood and urine, at both times, were not affected serologically, and at autopsy were free from pathologic changes. Subsequent blood cultures remained sterile, although the progress of the disease was unaltered.

At this writing, five months after the onset, the patient, although much improved, continues to suffer from an intermittent illness, characterized by extreme weakness, muscular discomfort, neuritis, and occasional slight fever and headache, which prevents him from returning to even a small fraction of his usual activities.

For a short time prior to his illness, the patient had been using unpasteurized milk and an abundance of cream from a herd of twenty-one cows, in which there were three reactors to *Brucella abortus* agglutination tests. Milk from one of these cows was found, on culture, to contain *Brucella abortus*.

CASE 2.—A man, aged 59 (a patient of Dr. C. L. Slonaker), whose previous history did not contain anything related to his present illness, on about July 4, 1927, complained of anorexia and unusual fatigue, accompanied by a distressing headache, most often frontal but also occipital, that persisted throughout the acute period of his illness. In August, 1927, there was chilliness and elevation of temperature. Beginning the first of September, the temperature ranged from 97.3 to 104 F. and exhibited notable undulations. Despite this fever, the patient continued at his usual duties until Oct. 14, 1927, when he was confined to bed. There were severe chills. On one occasion the rigor was of fifty minutes' duration, although generally the attacks were less violent. There were regularly two chills, accompanied by elevation of temperature, in a twenty-four hour period. In each instance, drenching sweats

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* Read before the Chicago Society of Internal Medicine, Feb. 27, 1928.

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2. Evans, Alice C.: Further Studies on Bacterium Abortus and Related Bacteria, J. Infect. Dis. **22**: 580 (June) 1918.
3. Keefer, C. S.: Report of a Case of Malta Fever Originating in Baltimore, Maryland, Bull. Johns Hopkins Hosp. **35**: 6-14 (Jan.) 1924.
4. Carpenter, C. M., and Merriam, H. E.: Undulant Fever from Brucella Abortus: Report of Two Cases, J. A. M. A. **87**: 1269-1271 (Oct. 16) 1926.
5. Huddleson, I. F.: Is Bacterium Abortus Pathogenic for Human Beings? J. A. M. A. **86**: 943-944 (March 27) 1926.
6. Huddleson, I. F., and Orr, P. F.: An Epidemiological Study of Undulant Fever in Michigan, read before the American Public Health Association, Cincinnati, 1927.
7. Belyea, G. N.: Brucella Abortus Infection in a Woman, J. A. M. A. **88**: 1482 (May 7) 1927.

of a noticeably peculiar odor followed. Fever was accompanied by increased severity of the headache and much general muscular discomfort. Arthritis was constantly present, most often in the shoulders. Despite extreme sensitiveness to movement, and at times apparent swelling of affected joints, redness was not noted at any time. Neuritis caused much discomfort. The skin of the entire surface of the body was extremely tender to pressure. There was a pronounced tremor, especially in the hands, but involving the whole body. This tremor, together with great weakness, made speech difficult. In addition, the patient complained greatly of what he termed an "inward nervousness," which he could not describe. There was marked mental depression evident early in the illness. The patient lost greatly in weight, was very pale, and was apparently very ill.

Examination revealed several partly submerged roots of teeth with evidence of some infection about them. There were some moist râles in the bases of the lungs on both sides, posteriorly, but no evidence of an active inflammatory process. The patient coughed occasionally and there was a small amount of sputum, apparently from the upper respiratory tract. The apex of the heart was palpable 2 cm. to the left of the midclavicular line, and a systolic murmur was heard at that point. A pulse of 68 accompanied a temperature of 102.6 F. The liver was readily palpable below the costal margin and was tender to pressure. The spleen was moderately enlarged. There were no petechiae or other skin lesions. The superficial glands were not palpably enlarged. Examination did not reveal any evidence of structural change in any joint. There was no paralysis and the reflexes were hyperactive. Babinski or ankle clonus was not found.

The urine was normal. The Wassermann reaction was negative. Blood examination revealed normal red cells, with a count of 4,100,000 per cubic millimeter; leukocytes, 8,000 per cubic millimeter, and a normal differential count. Examination for malaria was negative. Blood bilirubin was 0.9 mg. per hundred cubic centimeters. Repeated agglutination tests for *Bacillus typhosus* and *paratyphosus* A and B were negative. Agglutination with *Brucella abortus* was positive in a dilution of 1:3,000 with both bovine and porcine strains. Agglutination with *Brucella melitensis* took place at a dilution of 1:50. The blood culture became contaminated. Guinea-pigs inoculated with blood did not react serologically, and autopsy did not reveal any pathologic changes.

The temperature remained normal throughout a twenty-four hour period for the first time, Nov. 17, 1927, four and one-half months after the onset. At this time, seven months after the onset, the patient is reported to be without fever, although he is still suffering from recurrent arthritis and neuritis.

The patient had taken considerable quantities of raw milk in a period immediately preceding the onset of his illness.

CASE 3.—A woman, aged 47 (a patient of Dr. F. J. Powers), who had previously been in good health, began in September, 1927, to experience unusual fatigue when busied with her household duties. This continued throughout October and early November. In late November there was a noticeable anorexia and loss of weight. In December she felt as if she had fever in the evenings, and there were occasional sweats. The temperature was not taken at that time. The patient began also to suffer from headaches, dull in the frontal region but very severe in the occipital region, and pain in the neck and back. There were evidences of a mild arthritis in the joints of both hands, characterized by pain, swelling and stiffness, but without redness over the affected joints. Later she suffered from severe pain in the finger tips and discomfort in the eyes, not associated with eyestrain or influenced by light. In the periods of temperature elevation, the discomfort was increased and there were nervous manifestations with emotional tension. Jan. 9, 1928, she had a temperature of 102.6 F. and suffered a chill of one and one-half hours' duration. In the evening there followed a very heavy and prostrating sweat. Following this attack, fever and chills recurred at the same hour each day, though there was also chilliness at times other than these regular recurrences. Two temperature peaks were reached in each twenty-four hour period, and high fever and heavy sweats regularly occurred in the early morning. No distinctive odor was observed.

Physical examination did not reveal any evidence of focal infection about the head or throat. Tonsillectomy had been done. The chest and heart did not give any evidence of abnormality. On abdominal examination the liver was palpable at the costal margin, and tender to pressure. Later in the disease this tenderness could not be elicited. The spleen was not palpable. The superficial lymphatic glands were not enlarged. There were no apparent joint changes. Reflexes were hyperactive.

Urinalysis gave normal results. Blood examination showed: hemoglobin, 75 per cent (Sahli); erythrocytes, 4,300,000 per cubic millimeter, of normal morphology; leukocytes, 4,000 per cubic millimeter, of which 69 per cent were neutrophils and 31 per cent lymphocytes. No malaria organisms were found. Agglutination tests for *Bacillus typhosus* and *paratyphosus* A and B were negative. *Brucella abortus* agglutinated in dilutions of 1:1,600. The serum also agglutinated *Brucella melitensis* in a dilution of 1:80. Blood cultures were negative for *Brucella abortus* but contained a few colonies of *Staphylococcus albus*. Guinea-pig inoculations did not produce serologic changes, and autopsy did not reveal any pathologic changes.

At this time, five months after the onset, the patient is still suffering from chills, the temperature reaching 102.5 F. at night, followed by prostrating sweats. The fever is distinctly undulant in type, the average period of undulation being eight days.

For a short time prior to the illness, the patient had used large quantities of raw milk and cream from a dairy herd, which had recently been tested in our laboratory and also at Purdue University. The herd was found to contain many reactors to *Brucella abortus* agglutination.

CASE 4.—A man, aged 49 (a patient of Dr. F. J. Powers), the husband of patient 3, who had always been in good health, aside from one attack in which gallbladder disease was suspected, began, late in November, 1927, to experience unusual weakness and fatigue, although his daily activities were in no respect different from the routine followed for many years. Beginning in December, 1927, he was disturbed by a mild arthritis in the phalangeal and metacarpophalangeal joints of both hands. This was evidenced by discomfort in the joints and by swelling and annoying stiffness, especially in the morning. There was no redness. He also frequently experienced chilliness while at work. In a period of three weeks he lost 18 pounds (8.2 Kg.). With the onset of acute symptoms he suffered from a most severe headache. This was characterized by a pain, dull in the frontal region but severe in the occipital region, and associated with a most severe pain in the neck and back. The temperature was not taken prior to the morning of Jan. 17, 1928, at which time he was found to have a temperature of 101.4 F. On this day he suffered a severe chill and a heavy and prostrating sweat. He was under marked nervous tension. The severe pain in the head and neck persisted for only a few days. The severe chills and heavy sweats, likewise, recurred for only a few days. The temperature, on the seventh day after the severe chill, was normal, but rose to 99.2 F. when the patient undertook increased activity. Although weak, he was able to return to his place of business a few days later. Chills and fever recurred at irregular intervals. Unfortunately, the temperature was taken infrequently and was not charted.

Physical examination of the head, throat, chest and heart did not reveal any evidence of disease. On abdominal examination the liver was palpable at the costal margin and there was some tenderness to pressure, which may have been due to a diseased gallbladder. The spleen was not palpably enlarged; there were no definite joint changes; the superficial lymphatic glands were not enlarged, and the reflexes were hyperactive.

The urine was normal. On blood examination there was no evidence of anemia, and the cells were of normal morphology. The leukocytes numbered 7,000 per cubic millimeter. The differential count was normal and no malarial parasites were found. Agglutination tests for *Bacillus typhosus* and *paratyphosus* A and B were negative. Blood culture for *Brucella abortus* yielded a few colonies of *Staphylococcus albus* only. Guinea-pig intraperitoneal inoculation of patient's blood did not affect it serologically and no pathologic lesions were evident at autopsy. The patient's serum agglutinated *Brucella abortus*

of both bovine and porcine strains in a dilution of 1:320, and agglutinated *Brucella melitensis* in a dilution of 1:20.

At this time, approximately four months after the onset of illness, the patient is suffering from attacks of chills and fever at irregular intervals, and extreme fatigue with muscular discomfort.

For a short time prior to his illness, the patient had been using large quantities of unpasteurized milk and cream from the same herd as patient 3.

CASE 5.—A well nourished, 6 foot boy, aged 16 (a patient of Dr. O. C. Curtis), did not give any history of illness until July, 1926, when he complained of "rheumatism in both knees" and, at intervals, of heavy night sweats of a peculiar odor. Oct. 12, 1926, he developed an abscess in the right leg below the knee. This followed a very minor injury. The abscess was incised and continued to drain for several months, despite local treatment and gentian violet, given intravenously. A bacteriologic examination was not made at that time. There was no surgical evidence of bone involvement, and roentgen-ray examination was also negative. No other foci of infection could be found. In November, 1926, he complained for a few days of "rheumatism" in both shoulders, and chilliness. This attack followed the disappearance of fever and acute symptoms associated with the abscess, although the lesion continued to discharge. Indefinite symptoms continued at intervals until February, 1927, at which time he suffered an attack of arthritis, involving the shoulders, elbows, wrists, hips, knees, ankles and feet. This attack was of very short duration. Arthritic manifestations then recurred at intervals, but definite periods of recurrence cannot now be established. However, in May, 1927, he suffered from pain in the bottoms of both feet and in the great toe of the right foot. This type of attack recurred at periods of about two weeks and involved the feet, toes, knees and elbows, separately or together. The temperature was not taken at those times. There were frequent night sweats of peculiar odor, so profuse that the bed clothing was saturated. After Sept. 15, 1927, there were no symptoms until Nov. 2, 1927. At this time there was a very acute recurrence, with temperature ranging from 99.5 to 104.5 F., and accompanied by chills and very profuse sweats. There was also a rapidly shifting arthritis, which involved the feet, knees, hips and shoulders. This attack continued for fourteen days. Arthritis of moderate severity recurred, Dec. 15, 1927, and a milder manifestation followed, Jan. 15, 1928, making the periods of recurrence approximately one month. The clinical manifestations throughout the illness were principally neuritis and arthritis, accompanied by fever, chills and sweats, recurrent with variable intermissions, throughout a period of eighteen months. The only demonstrable abnormalities reported on physical examination early in the illness were the abscess described, variable evidences of arthritis, a furred tongue and some tenderness to pressure over the liver at the costal margin. No abnormalities were revealed on examination in the interim. During the acute recurrences the conditions varied from the most marked arthritis, with high fever, chills and sweats, to milder attacks. In a characteristic attack, a single joint became, in the course of a few hours, markedly swollen, limited in motion and extremely painful, and complete relief followed in forty-eight hours. In a mild attack, a tender metatarsophalangeal articulation was frequently the only abnormality. The history indicates that in no instance, despite swelling and pain, was there any noticeable redness over the involved joints. There were some attacks of pain due to neuritis.

Examination of the urine during a period of acute recurrence revealed a fairly heavy cloud of albumin, rare granular casts, and a few pus cells in each high power field. The urine became normal after the acute period subsided. Blood examination revealed: hemoglobin, 90 per cent (Sahli); erythrocytes, 5,300,000 and leukocytes, 7,700, of which 43 per cent were neutrophils. No malaria parasites were found. The Wassermann test was negative, and agglutination tests for *Bacillus typhosus* and *paratyphosus* A and B were negative. The serum agglutinated *Brucella abortus* in a dilution of 1:1,200 with both bovine and porcine strains. Blood culture for *Brucellus abortus* yielded a few colonies of *Staphylococcus aureus*. Intraperitoneal inoculation of guinea-pigs with the patient's blood did not produce serologic or anatomic evidence of disease.

The date of onset of this illness cannot be definitely fixed from the known facts of the history, but it is apparently established that the patient had been ill for more than a year at the time the examination here reported was made. In the present intermission he feels well and is gaining weight.

Prior to his illness the patient had been taking large quantities of raw milk from a single cow. Inquiry revealed that this cow had aborted.

CASE 6.—A man, aged 32 (a patient of Dr. R. B. Dugdale), had scarlet fever, mumps, chickenpox and pneumonia in childhood. A careful review of the history failed to reveal any other illness prior to the present one. He was in the best of health in June, 1927, and spent the month at a summer resort in northern Michigan. Following this period there was anorexia, a rapid decrease in strength and a loss of 20 pounds (9 Kg.). The patient suffered from severe headaches, frontal and occipital, and described as different from any type he had ever before experienced. Fever was a daily occurrence, accompanied by chilliness without severe rigors. Sweats were frequent, though not extremely profuse or prostrating. He was confined to bed, was weak, and suffered from nervousness and depression. There was increased excitability, tremor and eye discomfort, when the temperature was elevated. Moderate tenderness of the testes to any pressure was also a symptom. It was not until Oct. 1, 1927, three months after the onset, that a temperature chart was made. This chart followed a very constant pattern, in which there were two successive days of fever followed by two days of practically normal or subnormal temperature, and then recurring fever for two days. The highest points reached by the fever were in each instance on the fourth day following the last previous one and were most frequently accompanied by a sweat. Symptoms were gradually modified, and five months after the onset the patient no longer complained of headache, although a dull feeling and mild nervous phenomena accompanied the elevation of temperature. The temperature range was lower, the patient's general condition had improved, and he had regained 5 pounds (2.3 Kg.).

Examination of the head and throat did not reveal any evidence of infection. The thyroid was not palpably enlarged. Chest examination revealed a small amount of old fibrous change but no evidence of present activity. The roentgen ray confirmed these observations. There was no cough or sputum. The heart was normal. The liver was palpable at the costal margin and the spleen was slightly enlarged and tender. Superficial lymph glands were not enlarged. Both testes were tender to pressure, although there was no definite swelling and no evidence of epididymitis. No cause could be found for this condition other than this illness. The prostate gland was normal. Reflexes were active. The basal metabolic rate was plus 8 per cent. The erythrocyte count was normal; the leukocytes numbered 4,000, and the differential count was normal. No malaria organisms were found on repeated examinations. The blood Wassermann reaction was negative. Blood cultures for *Brucella abortus* yielded only a few colonies of *Staphylococcus albus*. Later culture was sterile. An agglutination test for *Bacillus typhosus* and *paratyphosus* A and B was negative. Agglutination of *Brucella abortus* occurred at a dilution of 1:20, four months after the onset of the illness, but at six and a half months there was no agglutination. Guinea-pigs inoculated with this patient's blood remained normal, both serologically and anatomically.

At this date, seven months after the onset of symptoms, the patient, although greatly improved and able to be about to some extent, still had slight elevations of temperature, exhibiting the same regular undulations previously described.

The patient, while on a vacation trip, had taken at least a quart of raw milk daily, in a territory in which about 30 per cent of the dairy cattle were infected with *Brucella abortus*. His illness immediately followed.

CASE 7.—A man, aged 61, was in very good health until February, 1926, at which time he suffered from an acute pain in the lumbosacral region, which followed the distribution of the sciatic nerve on both sides. He was confined to bed for three weeks. He stated that he was nervous and described a tremor of his hands. His temperature was elevated and he had one chill during this illness. A physician was called

but could give him little relief. Following this period, he recovered sufficiently to do work on a farm, although he suffered some pain in his shoulders. He had recurrent heavy chills and sweats, at intervals of from four to six months, during the following two years. In December, 1927, he had a violent rigor, which lasted for two hours and was followed by high fever for three hours, and then a very heavy and prostrating sweat. A recurrence of pain in the back, shoulder and arm caused his admission to the hospital on the third day after his acute attack. His temperature and pulse were normal on admission. Approximately three weeks after the acute chill, he suffered a slight chill., an elevation of temperature to 100.2 F. and then a mild sweat. During two months in the hospital, he complained of neuritis in the right arm, arthritis shifting from one shoulder to the other, and digestive discomfort. He had lost 35 pounds (16 Kg.) but was again gaining. The loss of weight may have been partially due to a restricted diet, owing to digestive discomfort.

Physical examination revealed normal conditions of the head, neck and chest. The heart was normal in size and rhythm. There was a slight systolic murmur at the apex, but no evidence of decompensation. The blood pressure was normal. The spleen was palpable and slightly tender to pressure. The liver was not enlarged or tender. The reflexes were not accentuated.

A roentgenogram of the gastro-intestinal tract revealed an abnormality at the pylorus, suggestive of ulcer. The gastric contents and feces were normal. A specimen of urine contained a trace of albumin, an occasional hyaline and granular cast, and one plus pus and blood. A prostatic smear did not give any evidence of infection. The Wassermann reaction was strongly positive. The blood count was normal and no malaria organisms were found. Agglutination tests for *Bacillus typhosus* and *paratyphosus* A and B were negative. The serum agglutinated *Brucella abortus* in a dilution of 1:320. A blood culture for *Brucella abortus* was sterile.

At this time the patient suffers from neuritis and arthritis, which varies in intensity and location. He has not had any recurrence of chills, fever or sweats since December, 1927.

Prior to his illness the patient had partaken freely of unpasteurized milk, in a territory in which fully 30 per cent of the cattle were known to be infected with *Brucella abortus*.

CLASSIFICATION OF CASES

The cases reported may be readily classified in three groups, comparable to the classification ordinarily followed in undulant fever due to *Brucella melitensis*, as follows: (1) undulant; (2) intermittent, and (3) ambulatory.

The typical undulant cases were of gradual onset, with anorexia, loss of weight, profound weakness, malaise, fever, and headache of a particularly distressing type. There was dull frontal and severe occipital pain, and very distressing pain between the shoulders. Occasionally there was pain in the sacro-iliac region. This discomfort was always increased during the periods of highest fever. The pain, in our cases, disappeared after the first few weeks of illness, although less severe recurrences of headache accompanied high fever. The temperature rose rapidly by steplike gradations of peaks and recessions during the first few weeks of the illness. Then for some weeks the striking features of the undulant fever were observed. Temperature peaks, commonly two in each twenty-four hour period, with intervals of recession, appeared at approximately the same hours each day. High fever in the early morning was regularly found. When the temperature was charted over a period of days, the characteristic undulations were observed. They usually occurred in periods of approximately eight days. However, in one case they occurred more frequently, and two practically afebrile days were followed by two days of fever. In this case, the unusual type of fever continued throughout more than six months of illness. The intermissions, if any, in the group of typical cases were afebrile, or with only slight elevations in periods of fatigue or with intercurrent infections. Late in the disease there was a gradual loss of the undulatory character and a tendency to the intermittent type. The pulse was slow and out of proportion to the temperature range, and increased in rapidity only as prostration followed the long continued illness. Chills, varying from only a distressing chilliness, which was not relieved by the application of heat, to the most severe rigor, accompanied the elevation of temperature. The sweats were profuse, prostrating and sometimes offensive in odor.

Symptoms referable to the nervous system were present in all our cases, and were varied and most distressing. Neuritis was common and shifted from one location to another. It was particularly common in the fingers, but caused pain also in the neighborhood of the larger joints, and involved the sciatic nerve on both sides. The reflexes were hyperactive and in three cases there was tremor, in one instance very pronounced. Mental depression and evidences of tension were present, and insomnia required medication. Despite the continued fever, there was never the evidence of toxemia, dulness and apathy that characterize the "typhoid state." Arthritis was a dominant symptom, and the hands, shoulders, hips, knees, ankles and feet were involved. Sometimes affected joints were swollen, but more often there was no swelling and there was never any redness. It is probable that some of the discomfort described as due to arthritis was really a periarticular neuritis. One of the patients had a bronchitis of several weeks' duration. Constipation was a common symptom but there was no evidence of gastro-intestinal disease. The spleen was palpable and tender in three cases, and in other cases not palpable. The liver was tender to pressure in two cases, early in the illness, but later this tenderness could not be elicited. A mild orchitis existed as a symptom in only one case.

The intermittent type was clearly manifest in our series by three cases. The first was characterized by attacks of fever, chills and sweats, in which arthritis and neuritis were dominant symptoms. The history in this case covered considerably more than a year, during which the intermissions were of irregular length. Later attacks recurred at two week intervals, and finally the period of intermission was noted to be approximately one month. Apparently normal health was enjoyed in the intermissions. In another case, slow in onset, there were recurrent chills and fever, at irregular intervals, with intermissions in which there was little or no elevation in temperature and fairly normal activities were possible. The third case apparently began with an acute attack of sciatica. This is not an uncommon type of onset in infection with the melitensis type. Fever and a chill accompanied this first attack, and recurred at intervals of four or six months. Two years after the onset, the patient suffered a very severe chill and sweat, followed by arthritis, and two weeks later a mild attack. The fever, in the periods of recurrence in the intermittent type, was of short duration, and therefore did not completely display the characteristic undulations, and a single attack, considered without the history, might easily have passed unrecognized.

The ambulatory group, in the classification adopted in the consideration of undulant fever due to the melitensis type, includes only those patients who do not suffer from any evidence of their illness or, at most,

exhibit a slight weakness or occasional flushed feeling. In this group, the possibility of focal infection due to *Brucella abortus* must be borne in mind, as Carpenter recently reported finding that seven out of fifty-five pairs of human tonsils, examined after removal, were infected with this organism. The diagnosis in these cases must therefore depend almost wholly on the blood examination or recovery of the organism from infected tissues.

Our patients did not develop the profound anemias described in *Brucella melitensis* infection. In several instances a leukopenia was found early in the illness, but a gradual return to a normal count followed. An increase of mononuclear cells was observed in only two cases, and the increase was not marked.

COMMENT

Isolation of *Brucella abortus* from the blood, of course, presents irrefutable diagnostic evidence. Although *Brucella melitensis* is readily grown, cultures of *Brucella abortus* from the blood are most difficult to obtain. The organism at first isolated from the blood is a semiaerobe and grows best on special culture mediums in an atmosphere containing 10 per cent of carbon dioxide. Transfer cultures grow readily. In our cases, guinea-pigs, which are highly susceptible to *Brucella abortus* infection, were inoculated with each blood specimen taken. Failure to obtain guinea-pig infection can be explained only on the basis that the organisms are not always present in the same numbers in the blood stream, or that the number of organisms contained in the amount injected was insufficient to overcome the defenses of the animal. This was true in one instance in which a positive culture was obtained from the blood, although the guinea-pig inoculated at that time did not become infected. The positive culture was obtained near the peak of a temperature curve, although in the experience of others no definite time advantage was noted.

Wright,[8] in 1897, demonstrated that malta fever due to *Brucella melitensis* could be definitely diagnosed by the agglutination test. A comprehensive study of the disease, made by a British commission[9] in 1904-1907, fully confirmed the specific character of this test when present. The presence of agglutinins was demonstrated in the blood as early as the fifth day. The specific character of the agglutination test for *Brucella abortus* infection in cattle has likewise been proved by research workers. In cases of *Brucella abortus* infection in man, as reported in this country by Evans, Carpenter, Huddleson and Orr, Belyea and others, agglutination has also been demonstrated in high dilutions, and has been accepted as a specific reaction. In these cases, sufficient clinical observation, bacteriologic investigation and blood study was possible to confirm the serologic diagnosis.

The fact that malta fever may exist in the absence of a positive agglutination test was pointed out by Bassett Smith,[10] in 1906. Carpenter,[11] in 1927, reported two cases in which *Brucella abortus* was obtained in blood cultures, and in which agglutination did not occur even in a dilution of 1 : 5. In one of these cases a culture of *Bacillus typhosus* was also obtained from the blood.

It is without the scope of this paper to discuss the technic of the preparation of the antigens used in performing the agglutination test. We wish, however, to call attention to the necessity of checking the antigens carefully against known positive and negative serums, since the antigens are not stable. Fresh blood, a proved culture, and a dependable antigen are necessary if error is to be avoided. Agglutination in dilutions above 1 : 50 is generally accepted as specific. The significance of agglutination in dilutions below 1 : 50 is being studied, and results will be reported later. Our present data, however, suggest that it is of diagnostic significance and should be considered with the clinical observations. Attention has been repeatedly called to the frequently observed "free zone" phenomena in serums of those infected with *Brucella abortus*, in which agglutination does not take place in the lower dilutions and readily takes place at 1 : 200 or higher. We have observed this phenomenon in one of our cases. Repeated tests are advisable in those cases in which agglutination at low dilutions or negative tests are obtained early in the disease, as positive agglutination may not be obtained throughout the period of clinical symptoms, or may not appear until after apparent recovery.

An intradermal test, made by the intracutaneous injection of killed bacteria, is now being studied. This test in our cases yielded specific reactions in each instance. We recognize the fact that the value of this procedure cannot be established on the basis of so limited a study, and are therefore continuing our observations in a large number of other disease conditions, as well as in normal persons.

SUMMARY

The characteristic symptoms of *Brucella abortus* infection in man are anorexia; loss of weight and strength; headache, and chills, fever and sweats of varying intensity throughout long periods of time, frequently with intermissions. The fever has a tendency to exhibit undulations which may vary in character and in length. Evidence of the effect of the disease on the nervous system is constant and arthritis is a common symptom.

The consideration of *Brucella abortus* infection in the differential diagnosis of all conditions exhibiting variable combinations of these symptoms will undoubtedly reveal more frequent occurrence of this disease.

Isolation of the organism from the blood or a positive agglutination reaction makes the diagnosis definite, although the disease may be present with negative manifestations.

8. Wright, A. E., and Smith, F.: Lancet **1**: 656, 1897.
9. British Commission: Report on Mediterranean Fever, 1904-1907.
10. Smith, Bassett: Report on Mediterranean Fever, Royal Soc. London, Part 4: 105, 1906.
11. Carpenter, C. M.: Report of New York State Veterinary College **28**: 178, 1927.

Teaching and Practice.—It must be admitted that the science of medicine has not reached a high state of development, even such as physiology has attained. And, furthermore, we must admit that many of the most important contributions to this science have been made by workers in related fields. Nevertheless, I believe that its greatest advancement will come only when it shall be pursued by men whose primary interest is in disease. Important contributions have been made by clinicians, but only comparatively recently have any considerable number of physicians become conscious of their obligations to contribute to this science, and only still more recently have physicians been given any relief from the burdens of practice which will give them opportunities for studying disease by scientific methods. It is true that many of the contributors to other branches of science also teach, but the practice of medicine is a much more time and energy consuming occupation than is teaching.—Cole, Rufus: *Science* **67**:51 (Jan. 20) 1928.

SUBACUTE COMBINED SCLEROSIS PROGRESSIVE DURING REMISSION OF PERNICIOUS ANEMIA

REPORT OF A CASE

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Some of the more recent literature has been very encouraging regarding the remission of neurologic symptoms in pernicious anemia. Bubert[1] reports a case of subacute sclerosis in which advanced symptoms were present since the early part of 1926. His patient, after following the Murphy-Minot diet for about one year showed marked improvement. He states:

> The improvement in this patient is best appreciated by one who saw him as a depressed invalid in the early part of 1926, unable to walk without two canes and having the greatest difficulty in maintaining his balance even when standing still, and who again saw him, just a few days ago, walking down to his work at a very brisk pace, swinging the one cane he now uses, more from choice than from necessity.

The Lilly Research Laboratory, in describing its liver extract no. 343, states:

> Under adequate therapy, disorders of the central nervous system have not developed, and if already present, their progress has been checked. Decrease of symptoms due to neural lesions occur particularly when the new red blood cells have been normal in number for some weeks. Symptoms indicative of serious damage to the central nervous system have not disappeared, but coordination of the extremities has frequently improved.

Minot and Murphy,[2] in summarizing their experience in the treatment of forty-five patients with their special diet, state that "following the diet, all the patients showed a prompt, rapid and distinct remission of the anemia, coincident with at least rather marked symptomatic improvements, except for pronounced disorders due to spinal cord degeneration."

In the case presented here, while marked systemic improvement resulted from the Murphy-Minot diet, the patient not only showed no improvement in the neurologic condition but developed a pronounced ataxia and other distressing nervous symptoms during an otherwise favorable remission.

REPORT OF CASE

A. S., a white man, aged 56, a telegraph operator, in June, 1926, complained of diarrhea, some loss of weight and general malaise. His previous health had been unusually good, as he had never suffered from any postchildhood diseases. During the past year he had noted some soreness of the tongue which he had attributed to the use of chewing tobacco. His diet was not unusual, except that he did not like butter or milk. His habits were regular. There was no history of any venereal disease. On physical examination he appeared well developed but slightly emaciated. His skin was of the lemon skin color associated with primary anemia. Aside from a bilateral inguinal hernia and the evident anemia, the physical examination did not show anything of note. The blood examination showed: hemoglobin, 45 per cent (Sahli); red blood cells, 2,850,000; white blood cells, 4,600. A Wright stain of the blood film showed the white cells in normal proportions and no stippling or unusual red cells. The blood Wassermann and Kahn reactions were negative; the urine was normal; roentgenograms of the chest and gastro-intestinal tract were entirely negative for evidence of organic disease. Gastric analysis after an Ewald test meal showed no free hydrochloric acid.

1. Bubert, H. M.: Subacute Combined Sclerosis, J. A. M. A. 90: 903-906 (March 24) 1928.
2. Minot, C. R., and Murphy, W. P.: Treatment of Pernicious Anemia by a Special Diet, J. A. M. A. 87: 470-476 (Aug. 14) 1926.

The patient was given a general treatment comprising the ingestion of iron, arsenic, hydrochloric acid, and a high caloric diet. Examination, September 30, showed that on this routine he had gained about 6 pounds (2.7 Kg.); the hemoglobin increased to 70 per cent and the red cells to 3,500,000. The patient was not seen again until November 18, when he returned complaining of tingling and numbness of the fingers. The spinal fluid was found to be normal. The red cells at this time were 3,940,000, and hemoglobin 85 per cent. Dr. John Walker Moore, who was seen in consultation, considered the patient's condition due to posterior lateral scleroses and advised the use of the Murphy-Minot diet. Unfortunately the patient did not observe this diet, and was not seen again until May 3, 1927, when he had become bedfast. He was very weak and emaciated, and the blood examination showed 40 per cent hemoglobin and 1,450,000 red blood cells. The stained blood film showed anisocytosis poikilocytosis and nucleated red blood cells. His condition was considered precarious and he was advised to enter the Norton Memorial Hospital, where the following day he was given a transfusion of 500 cc. of citrated blood. He was then placed on the Murphy-Minot diet. The stay in the hospital was from May 4 until July 13, 1927. During this time there was marked improvement in the patient's general condition. He gained 13½ pounds (6 Kg.), and was able to walk about the hospital grounds unaided. The progressive improvement in the blood picture is shown in the accompanying table.

Progressive Improvement in Blood Picture

Date	Hemoglobin, Per Cent	Red Cells	Reticulated Cells, Per Cent
5/ 4/27	40	1,450,000	
5/13/27	59	2,570,000	6
5/24/27	59	2,610,000	4
6/17/27	68	3,230,000	1
7/12/27	74	4,100,000	0

After thorough instructions regarding his diet the patient left town for a vacation. On his return, October 13, he had gained 21 additional pounds (9.5 Kg.); the hemoglobin had increased to 88 per cent and red cells to 4,550,000. He said, however, that he was unable to walk as well as when he left the hospital. He complained of difficulty in coordinating the movements of his legs, of increased numbness and tingling of his hands and of an occasional cramplike sensation of the arms and legs. The knee and ankle jerks, which during his stay in the hospital had been exaggerated, now could not be elicited even after reinforcement. The gait was definitely ataxic and the Rhomberg sign was positive. There was some sensory disturbance of both the hands and the feet.

At present the patient has been on his diet nearly one year. He continues to enjoy a remission from the anemia, but the symptoms referable to the central system have not shown any improvement. In fact, the incoordination of motion, particularly the inability to stand without swaying and the difficulty in walking have become worse. For the past month we have substituted Lilly's liver extract No. 343 to relieve the monotony of his diet. I believe that there is nothing in the treatment of his condition that offers hope for greater improvement than the routine being followed.

CONCLUSION

Some of the more recent literature has been very encouraging regarding the improvement in neurologic symptoms in pernicious anemia following treatment with the Murphy-Minot diet.

The observations in the case reported here were more in keeping with the published results of Murphy and Minot in that no marked improvement was noted in symptoms referable to the central nervous system, although a sustained improvement in the patient's general condition was accomplished.

This case is of especial interest in that the more marked neurologic symptoms developed after the patient had been on the Murphy-Minot diet several months and was enjoying an otherwise distinct general systemic improvement.

Clinical Notes, Suggestions and New Instruments

A NEEDLE HOLDER FOR FRENCH NEEDLES *

DERYL HART, M.D., BALTIMORE

It is at times highly desirable to place sutures with a small round needle which is easy to thread and still does not make a hole that is larger than will be filled with the suture, thus preventing any bleeding from the puncture wound and causing the minimal trauma. On account of the danger of extradural hemorrhage from this source, it has for a number of years been the custom in the neurologic service to close the galea with silk on number 3 French needles, since they most satisfactorily fulfil these requirements. The greatest difficulty with this procedure was to get a clamp which would hold the needle firmly enough and at the same time not break it by flattening. Broad pointed clamps were most satisfactory but were likewise most apt to break the needle. Even with these, however, the needle would frequently slide, so that it passed through the clamp obliquely instead of at right angles, and would also rotate through as much as 180 degrees, so that the direction of the point would be reversed. This instability and resulting inaccuracy gave rise to a tendency to use unnecessary force, which would frequently break the needle.

In order to overcome these difficulties, this needle holder was devised. It is very simple in construction, consisting

Needle holder, shown at right in the hand, with the double grip for the fingers, three fingers being used to hold the instrument more securely. It can be used with the needle pointed either to the right or to the left, but the concavity of the needle must always be up to correspond to the curve of the needle holder with the instrument held in this manner. *A*, cross-section of the holder at the point where the needle is inserted, showing the convex upper and concave lower jaw, corresponding to the curvature of the needle; *B*, the holder open to show the convex upper and concave lower jaws, with the transverse grooves to give absolute immobility; *C*, lateral view showing the needle broken flush with the clamp and with the grooves so placed that they will fit together. The grooves are not absolutely necessary. One side can be grooved, or the grooves can be directly opposite or made to fit together as in the drawing.

only of a broad-nosed clamp, one jaw of which is concave and the other convex, so that they fit together, the convexity and concavity being the same as the curve of the needle for which it is to be used. In addition, the jaws of the holder are grooved at right angles to the long axis, this still further insuring absolute immobility of the needle. This of necessity restricts the use of the holder to the one type of needle for which it is made, and since the number 3 French is the most satisfactory size, we use it almost exclusively. However, a holder of this type can be made for any particular needle desired.

This holder has now been in use for about three years and has given perfect satisfaction when it is properly made. It is absolutely necessary to have the proper curve on the gripping jaws, as well as to give them the proper width. The handles must have sufficient strength and spring and a number of catches, so that any desired gripping force can be obtained. On account of the curvature of the gripping surface, the needle must be inserted with its curve to correspond to the curve of the holder. To fail to do so, of course, breaks the needle invariably, but this implies—and we find it to be true—that when the needle is properly inserted it will break before it can move.

To facilitate the proper insertion of the needle, the instrument is provided with a single grip for the thumb and a double grip for the fingers. With the holder in this position the needle is inserted with the point up, and it can be directed either to the right or to the left. This curved clamping surface makes the instrument to a certain extent awkward when used for pulling the needle through, but if its construction is kept in mind and the clamp is not applied firmly enough to bend or break the needle, it is perfectly satisfactory. Since most of the needles can be pulled through by an assistant, the occasion seldom arises to use it in this manner.

Though originally designed for neurologic surgery, the holder is now being used more and more whenever a small round needle is needed and with equal satisfaction in all fields.

The only caution necessary is to be sure that the holder is made with the proper curvature of the jaws, and that this is not disturbed when the instrument is repaired.

* From the Department of Surgery of the Johns Hopkins Hospital.

INSULIN THERAPY IN UNDERNOURISHED PSYCHOTIC PATIENTS: PRELIMINARY REPORT *

KENNETH E. APPEL, M.D.; CLIFFORD B. FARR, M.D., AND HAROLD K. MARSHALL, M.D., PHILADELPHIA

A considerable foreign literature has appeared on the use of insulin in undernutrition. Critical undernutrition is a frequent problem in the treatment of psychotic patients. The following is a brief report on thirty-three cases treated with insulin in our hospital. The majority of these were patients who had failed to gain on the usual fattening regimen.

The accompanying table, showing the technic employed, is self-explanatory. The upper limit of insulin dosage was determined by the individual appetite and tolerance. Mild symptoms of hypoglycemia, such as increased appetite and very slight uneasiness, were permitted to occur. Symptoms such as weakness, sweating, vertigo, increased pulse rate, and palpitation led us to reduce the dosage or in a few cases to discontinue the treatment. Frequent blood sugar determinations were made as a check on such clinical symptoms.[1] Notwithstanding careful checking of the blood sugars at different times of the day, three cases of incipient coma developed, two requiring intravenous injections of dextrose.

Insulin Administration Technic *

Days	Breakfast, Units †	Dinner, Units	Supper, Units	
1	5	0	5	
1	5	5	5	
1	10	5	5	
1	10	5	10	
1	15	5	10	
2	15	10	10	
2	20	10	10	
3	20	10	15	† Female limit
2	25	10	15	
3	25	15	15	
N	25	20	15	† Male limit

*Insulin was administered thirty minutes before meals; the dosage as given for the last day was continued throughout the period of treatment. Supplementary feedings, consisting of orange juice and egg malted milk, were given in the middle of the morning and of the afternoon. After a few days, toast and a glass of milk were added at bedtime. Patients were weighed nude once a week at the same time of day. Routine urinalysis and blood sugar determinations were made before treatment was started and repeated at intervals during the course as indicated. Rest in bed was not employed, and there was no change in the patient's regular routine.

† Insulin-Lilly U-20.

The special diet (including the extra lunches) which was given in all cases during insulin administration yielded approximately 4,000 calories, containing about 350 Gm. of carbohydrate. Dextrose for intravenous use, and orange juice for administration either by mouth or by nasal tube,

* From the Department for Mental and Nervous Diseases of the Pennsylvania Hospital.

1. Blood sugar determinations will be reported in a subsequent article.

were constantly kept on hand. All patients were under the continuous supervision of nurses who were familiar with the symptoms of hypoglycemia.

Sixteen male patients were put on our routine diet for four weeks and made an average weekly gain, per patient, of 3 pounds (1.4 Kg.). Of the eleven patients in whom treatment was completed long enough to permit subsequent observation for four weeks, six gained over the weight at the end of the treatment, one remained stationary, and four lost. The increase was greater than the decrease, so that the weight gained was more than maintained.

Each of thirteen female patients on the special diet alone for four weeks gained 9/10 pound (0.4 Kg.) weekly. In the following three weeks on the same diet plus insulin, they gained 2 1/10 pounds (1.1 Kg.) per patient weekly. One patient, not given the preliminary diet, gained 11 pounds (5 Kg.) in twelve days and showed considerable mental improvement.

Three patients were given doses of insulin varying from 5 to 25 units daily for from two to eight weeks without any apparent result.

In four cases the treatment had to be discontinued on account of symptoms of insulin intolerance, although in some of these cases the blood sugar did not reach low levels.

Our results indicate that insulin treatment properly controlled is a valuable adjunct in the treatment of certain critical cases of undernutrition in psychotic patients. The appetite and the amount of food intake were usually increased. There was usually a marked increase in weight. The dry, gray skin in most cases took on a healthy color and turgor. The effect of the treatment on the mental status is difficult of appraisal. In approximately 20 per cent of our cases, definite improvement was observed.

A DOUBLE ACTIVE ELECTRODE FOR DIATHERMIC COAGULATION IN CANCER

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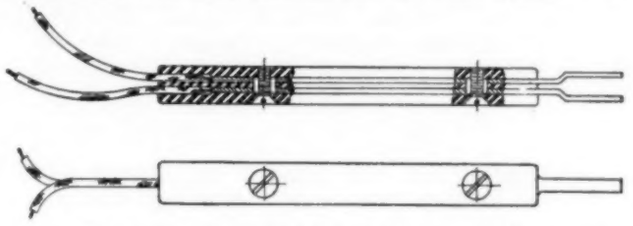
Director, New York City Cancer Institute

Diathermic coagulation means the destruction of tissue brought about by the heat that is developed within the tissue when a high potential, high frequency diathermy current passes through it. The intensity of the heat which develops under the influence of the high frequency current of the diathermy machine when a small electrode is used is such that the tissue undergoes coagulation necrosis. Diathermic coagulation of tissue in malignant tumors may be accomplished in two ways. Two small active electrodes of the same size and shape may be placed over two opposite ends of a tumor, and then coagulation takes place in the part of the tumor located between the two electrodes. With the present types of diathermy machines this method can be used only in bulky tumors elevated over the surface of the skin. When the two electrodes are brought too close together, sparking takes place with carbonization of surrounding tissues. On the other hand, when the two electrodes are at the necessary distance the coagulation may become too extensive and too deep. It is also very difficult for the operator to handle two electrodes, one in each hand, while doing the operation.

In view of all this, the method generally employed is the application of one large neutral electrode to the back, abdomen or some other distant part of the body of the patient and of another small, active electrode to the part of the tumor which is to be destroyed. With this method the active electrode can be constructed of such a shape as to reach the tumor wherever it is situated, as, for instance, in the cervix, rectum, larynx or urinary bladder. However, this method is also imperfect in many respects.

The part of the patient's body which is in direct contact with the large neutral electrode is heated only to a very slight degree, while in the vicinity of the small active electrode the temperature becomes so high that coagulation necrosis takes place. It is self-evident that in a certain area of the body of the patient located between the two electrodes and nearest to the small active electrode, a high temperature must develop which may not suffice to necrotize but may be sufficient to produce a pathologic condition in the normal tissues surrounding the malignant tumor. Moreover, the depth of the coagulation cannot be controlled, and destruction of the walls of the blood vessels and subsequent hemorrhage may take place. Moreover, the intensity of high potential high frequency current which passes through a large area between the neutral and active electrodes causes, as I have noted frequently, circulatory disturbances and even occasionally a shock.

I have been conducting both experimental and clinical investigations on diathermic coagulation since 1914, and have always been endeavoring to obtain a machine that will produce the coagulation with as low an intensity of current as possible. In 1915 the Wappler Electric Company constructed a spark gap diathermy machine for me which seemed to be



Instrument for diathermic coagulation of tissue in which there are two active electrodes within the same handle.

the most satisfactory at the time. However, since the discovery of the amplifier tubes of De Forrest, it became possible to produce much more efficient diathermy apparatus.

In 1926, Schwarzkopf and I[1] described a diathermy machine based on new principles. In this machine De Forrest amplifier tubes are employed instead of spark gaps. This machine also differs from the present types of diathermy machines in that instead of an alternating current transformer a source of direct current (a battery or a high voltage rotary generator) is used which produces an uninterrupted direct current. The machine delivers continuous undamped oscillations, and therefore coagulation is produced with little intensity of current and practically no sparking.

In the old type of machines the active electrode has to be placed over the tumor mass before the current is put on and must not be removed before the current is shut off to obviate sparking and carbonization of tissue. With the machine here described it was found that practically no sparking takes place, with the result that the electrode can be changed from one place to another without shutting off the machine.

Since that phenomenon was noted I decided to attempt to construct two active electrodes within the same handle, so that diathermic coagulation might be obtained without the use of a large neutral electrode. An electrode, as shown in the accompanying illustration, was constructed. It was found that when this electrode is connected with the machine described and the current put on no sparking takes place, even between the two metal rods within the handle of the electrode. This double active applicator can be placed while the diathermy current is on anywhere on the operating table without causing any sparking; at the same time when it is placed over the tumor coagulation takes place between the two electrodes. This double electrode can be removed from the coagulated area and placed into an adjoining area without shutting off the machine and without causing any general or local disturbance in the organism. The two metal rods within the handle are separated with an insulator the thickness of 3 mm. and the distance between the electrodes is 5 mm. Other shapes of electrodes are being constructed for various organs.

I am under the impression that this double active electrode makes the method of diathermic coagulation markedly more simple and efficient, and therefore deem it advisable to present this short article.[2]

124 East Fifty-Ninth Street.

1. Schwarzkopf, Erich; and Levin, Isaac: Arch. Clin. Cancer Research **11**: 113, 1926.
2. Both the diathermy machine and the double electrodes are constructed by the Wappler Electric Company, Inc.

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SATURDAY, JUNE 2, 1928

MECHANISM OF DEATH IN ACUTE INTESTINAL OBSTRUCTION

A remarkably small opening in the bowel apparently permits it to carry on its function without untoward effects on the person concerned. A patient suffering from a slow-growing carcinoma of the bowel may be entirely unaware of his condition and a physician is not consulted until obstruction is complete and bowel movements have been impossible for several days. Even after complete obstruction the general condition of the patient is not acutely altered, symptoms are not rapid in appearing, and progress is gradual but slow in the direction of dissolution. Quite different is the picture in cases of acute intestinal obstruction. Unless the condition is quickly relieved the progress toward dissolution is rapid and stormy, and death ensues in a few days. Obviously there must be a difference in the mechanism of the cause of death in different types of intestinal obstruction.

The recent work of Gatch, Trusler and Ayres [1] has corroborated and correlated the work of other investigators and, in addition, has thrown light on the causes of death in intestinal obstruction. The clinical applications of this knowledge will be of value in the treatment of disease. Their investigations have led them to divide acute intestinal obstruction into two types of cases, those without gangrene (simple) and those with gangrene (strangulated). This classification they found to be identical with that of Hausler and Foster,[2] who had previously reported it, but the later investigators arrived at their classification independently and without knowledge of the work of the earlier investigators. Gatch and his colleagues have shown that death in the cases without gangrene (simple) is due to dehydration, loss of chlorides and starvation. When chlorides and water are given parenterally in sufficient quantity in these cases, life can be prolonged sufficiently so that death ensues by starvation. When the bowel is strangulated, however, free exhibition of chlorides parenterally may temporarily improve the condition but within a few days the animal dies of a toxemia. The difference is due to the fact that the normal mucous membrane of the intestine will not absorb enough toxins to kill the animal, while the abnormal conditions produced by strangulation allow sufficient absorption of toxins through the altered mucous membrane and the peritoneum to cause death rapidly. Moreover, an ideal culture medium is developed for the rapid proliferation of pathogenic bacteria. The closed loop of bowel with its altered structure permits a rapid growth of bacteria; the wall becomes more permeable to the toxin; the gas resulting from putrefaction increases the pressure within the tube and thus increases absorption; perforation leads to peritonitis. Dragstedt and associated workers [3] have shown that experimentally closed loops of duodenum and jejunum prove rapidly fatal unless drained to the outside. If they are drained, the animal recovers. An isolated loop may be washed and left open in the peritoneal cavity, and if the animal escapes peritonitis it will live. The loop becomes sterile in a few weeks and may then be closed without toxic symptoms. Even if anemia necrosis ensues, bad effects do not result from the sterile loops. In another report, Dragstedt and his associates [4] have shown also that if a closed loop of intestine is first washed with ether or an astringent wash, the obstruction is not fatal to the animal even though the contents of the loop are so extremely toxic that, when they are injected intraperitoneally into another animal, death is caused within six hours. These chemicals are not bactericidal but they do prevent absorption. In other words, most investigators of this problem agree that death in cases of strangulated bowel results from conditions which increase absorption of toxins. In the simple type of obstruction the toxins are also present but, the mucous membrane remaining unaltered, absorption is not sufficient to kill, whereas dehydration, loss of chlorides and starvation will eventually cause death unless the obstruction is relieved. It is apparent that the modes of controlling these two types of obstruction will be different.

Obstruction of the simple type occurs characteristically at or near the pylorus and is found also in the early stages of any intestinal obstruction. This lesion should not be regarded as an emergency surgical condition. Before operation the dehydration, hypochloremia and the starvation may be actively treated by the intravenous administration of sodium chloride, dextrose and water. With such treatment the prognosis of simple obstruction should be favorable. Obstruction of the gangrenous type must be treated in a different way. If peritonitis is present, any treatment may be hopeless. If peritoni-

1. Gatch, W. D.; Trusler, H. M., and Ayres, K. D.: Causes of Death in Acute Intestinal Obstruction, Surg. Gynec. Obst. **46**: 332 (March) 1928.
2. Hausler, R. W., and Foster, W. C.: Studies of Acute Intestinal Obstruction: 1. Different Types of Obstruction Produced Under Local Anesthesia, Arch. Int. Med. **34**: 97 (July) 1924.
3. Dragstedt, L. R.: Moorhead, J. J., and Burcky, F. W.: Intestinal Obstruction: An Experimental Study of the Intoxication in Closed Intestinal Loops, J. Exper. Med. **25**: 421 (March) 1917.
4. Dragstedt, L. R.; Dragstedt, C. A.; McClintock, J. T., and Chase, C. S.: Intestinal Obstruction: II. A Study of the Factors Involved in the Production and Absorption of Toxic Materials from the Intestines, J. Exper. Med. **30**: 109 (Aug.) 1919.

tis is not present, even desperate cases may sometimes be rescued. Surgical operation should be preceded by intravenous injection of physiologic sodium chloride solution. Local anesthesia is preferable because these patients do not withstand general anesthesia well. Intestinal anastomosis should not be undertaken in the presence of great distention of the bowel. The tissues cannot be safely sutured, additional shock is produced, and fresh surfaces for absorption of toxins are opened by this operation. Excision of the gangrenous loop and enterostomy seem to be the procedures of choice with intestinal anastomosis after the patient has recovered.

The work of the investigators that have been mentioned and of others referred to in the bibliography appended to the report of Gatch, Trusler and Ayres has done much toward explaining the cause of the intense toxemia, profound shock and rapid dissolution caused by an apparently simple condition. The violent reaction which ensues would hardly be expected except that experience has shown that it does occur. A careful study of every case of intestinal obstruction encountered and preoperative treatment along the lines suggested by these investigators, especially with regard to bringing the blood chlorides up to the normal, should be of tremendous value toward solving this vexatious problem. The application to therapeusis of the knowledge presented should reduce the mortality of intestinal obstruction.

THE ANTERIOR LOBE OF THE HYPOPHYSIS

The present age in the medical sphere has been characterized, among other novelties, by an enthusiasm for organotherapy. The employment of this mode of remedying bodily ills or correcting functional defects has been based on facts often so fragmentary or debatable as to cast doubt on the rationality of their application. Broadly speaking, it is accepted today that the glands of internal secretion have a profound influence on the growth of the body, its development, including the secondary sex characters, the rate of metabolism and other important functions. Obviously, the potencies on which the endocrinologist banks are represented by specific chemical substances most of which remain to be isolated and identified. Epinephrine, thyroxin and insulin thus far represent striking examples of success in the endeavors to establish a biochemical basis for glandular therapy; and even insulin has not yet completely succumbed to the persistent attacks of the investigator, though its chemical structure is destined to be clearly revealed in the near future.

Of late the pituitary gland has been the subject of renewed study by the chemist. Sollmann [1] has remarked that, in analogy with the suprarenal gland and the pancreas, the pituitary gland contains two portions that differ absolutely in function and in pharmacology. It is remarkable, he adds, that the parts of the suprarenal and pituitary that are most important to life have the least pharmacologic actions, while those parts whose extracts produce very striking pharmacologic effects—the suprarenal medulla and the posterior pituitary—appear to be of minor importance to the organism. Recently, detailed reference [2] was made to the success with which a group of workers [3] have separated products representing the oxytocic and pressor activities, respectively, of the posterior lobe of the pituitary. Such chemical identifications are essential for the more complete understanding of the profound influences and actions of the gland. Another important advance seems to be in progress in relation to the anterior lobe of the hypophysis. Ablation of this structure is followed by a train of characteristic effects. In 1921, Evans and Long [4] demonstrated specific endocrine effects such as gigantism and sex disturbance from parenteral dosage of mammals with beef anterior hypophysis after failure in a long series of massive oral administrations. This presented an analogy to the pancreatic insular hormone, which also exhibits inefficacy when administered by mouth. A way was opened to the attack on hypophysial infantilism and dwarfism. In his lecture before the Harvey Society in 1925, Evans regarded certain conclusions as thoroughly justified: first, that the anterior hypophysis is indispensable for growth to adult stature, a lessened amount of its hormone being the direct cause of an important group of, if not all, endocrine dystrophies, and an increased amount of the hormone the direct cause of overgrowth; second, the hypophysis stands in a necessary relationship to normal function of the thyroid, sex glands and suprarenal cortical tissue. Any explanation of how these effects are mediated constitutes part of the ill understood field of chemical dependences and correlation within the body, ignorance of which cannot properly place in doubt evidence that such correlation exists.

Evans' anterior pituitary extracts were comparatively crude and were certain to be improved in subsequent efforts. A considerable degree of success seems to have been secured in the Laboratory for Surgical Research at the Harvard Medical School.[5] Putnam, Teel and Benedict have there prepared a sterile active extract of the anterior lobe of the hypophysis that has been used in animals with the production of changes which appear to be specific. It serves to repair some and perhaps all of the disabilities produced by hypo-

1. Sollmann, Torald: Pharmacology of the Pituitary Gland, in Glandular Therapy, Chicago, American Medical Association, 1927.

2. Separation of the Active Principles of the Posterior Lobe of the Pituitary Gland, editorial, J. A. M. A., **90**: 618 (Feb. 25) 1928.

3. Kamm, O.; Aldrich, T. B.; Grote, I. W.; Rowe, L. W., and Bugbee, E. P.: The Active Principles of the Posterior Lobe of the Pituitary Gland: I. The Demonstration of the Presence of Two Active Principles; II. The Separation of the Two Principles and Their Concentration in the Form of Potent Solid Preparations, J. Am. Chem. Soc. **50**: 573 (Feb.) 1928.

4. Evans, H. M., and Long, J. A.: Anat. Rec. **21**: 62, 1921.

5. Putnam, T. J.; Teel, H. M., and Benedict, E. B.: The Preparation of a Sterile, Active Extract from the Anterior Lobe of the Hypophysis, Am. J. Physiol. **84**: 157 (Feb.) 1928.

physectomy. The extract has been used in one human case of pituitary insufficiency from a craniopharyngeal pouch cyst, apparently with temporary benefit. A biologic test has been devised and the way seems paved toward progress to an extent that can at present not be clearly foreseen.

IRON IN THE TREATMENT OF ANEMIA

While chlorosis, a term applied to a condition characterized by a diminished percentage of hemoglobin in the blood occurring in young girls, is becoming increasingly infrequent, in cities at least a lowered hemoglobin is now seen rather often in adults. In fact, in many conditions of impaired health and vitality, without any specific disease, the hemoglobin percentage is found to be between 70 and 80. Several causes, in cities, for this lowered hemoglobin may be hypothecated, from the inhalation of carbon monoxide in small quantities, more or less constantly, to a lowered percentage of hemoglobin associated with subacute or chronic focal infection. In all serious diseases, secondary anemia occurs sooner or later.

Iron needed for the production of hemoglobin in health is acquired from the iron-containing food and drink. In disease conditions, chemical or glandular disturbances in the body seem to prevent this normal bodily acquirement of iron from nutriments. In most cases of nutritional anemia and secondary anemia, and more or less in primary anemia, the administration of iron is of benefit. The positive benefit in anemias from the administration of liver or liver extracts has recently been demonstrated. Besides the iron contained in liver tissue, the administration of liver represents vitamin medication.

The administration of iron subcutaneously or intravenously is rarely necessary or desirable. Recent studies as to the value of inorganic iron in anemia by Helen S. Mitchell and Margery Vaughn [1] indicated that the hemoglobin determination was more significant than the number of erythrocytes in nutritional anemia. Consequently, the hemoglobin percentage was used as a determination of the benefit derived from various iron salts fed to rats in which nutritional anemia had been caused. They found, as it has clinically long been decided, that small doses of iron are sufficient to cause improvement. Large doses of iron do not increase the hemoglobin improvement but pass off as unutilized salts in the feces.

These investigators repeated experimental work done with iron by Mitchell and Schmidt [2] and found that the conclusions drawn by the previous investigations were correct. In this more recent investigation Mitchell and Vaughn found that the best hemoglobin improvement was caused by administering ferric acetate, ferric albuminate (5 per cent Fe_2O_3), ferric chloride and ferric citrate. Ferric oxide, ferrous carbonate, ferrous sulphate, ferrous lactate and ferrum reductum (reduced iron) were inferior to the substances listed. The solubility seemed to be an important factor. They found that the ferrous carbonate, of which the much used Blaud pill is composed, is somewhat inferior to the saccharated ferrous carbonate in raising the homoglobin content of the blood.

1. Mitchell, Helen S., and Vaughn, Margery: J. Biol. Chem. **75**: 123 (Oct.) 1927.
2. Mitchell, Helen S., and Schmidt, L.: J. Biol. Chem. **70**: 471 (Oct.) 1926.

Current Comment

CONFERENCE COMMITTEE REJECTS DEDUCTION OF CONVENTION EXPENSES FROM INCOME TAX

As related in the general news column in this issue of THE JOURNAL, the conference committee on the tax reduction bill took action which resulted in removal from the bill of the right granted to physicians to deduct, in computing their income tax, the expense of attending annual sessions. Again Senator Copeland did his utmost, but this time, apparently by the technic of legislative action, the point was lost. It now remains for the commissioner of internal revenue to authorize a reversal of the rules of the department which have resulted in discrimination against physicians. The Senate expressed its wish by a decisive vote. Perhaps this fact will have some influence with the commissioner.

HYPOCHLOREMIA IN MERCURY POISONING

Observations have rapidly multiplied in recent months to indicate the importance of a properly maintained chloride content of the blood for the well being of the organism. The "stabilizing" of the blood chlorides seems to be quite as essential as is the maintenance of a relatively unvarying level of sugar and nitrogenous catabolites or the preservation of the hydrogen ion concentration of the circulating medium within narrow limits. Excess of chloride is ordinarily readily eliminated by the kidneys. Uncompensated losses leading to disturbances may occur through vomiting whereby the secreted gastric chloride is withdrawn from the economy, through diarrhea when for some reason absorption fails, or through "storage" or diversion of chlorides to the tissues. Unexpectedly under some conditions in which other blood constituents tend to accumulate in undue amounts the chlorides may show a depletion. Thus, attention was lately directed in THE JOURNAL [1] to the blood picture in intestinal obstruction attended by a toxemia in which a fall in the blood chloride accompanies the terminal rise in the nonprotein and urea nitrogen. It was pointed out that the fall in blood chlorides in obstruction is due to their

1. Blood Chloride in Intestinal Obstruction, Current Comment, J. A. M. A. **90**: 1294 (April 21) 1928. Dragstedt, L. R.: Blood Chemistry in Intestinal Obstruction, Proc. Soc. Exper. Biol. & Med. **25**: 239 (Jan.) 1928.

accelerated passage into the alimentary tract and failure of reabsorption. Trusler, Fisher and Richardson [2] of the Indiana University School of Medicine at Indianapolis have cited analogous conditions in cases of mercury poisoning. Here too the hypochloremia results directly from loss of chloride through vomiting, and not from any obscure toxic change in the blood or its vessels. In addition to such loss from the gastrointestinal canal, the depleting effect of the edema frequently occurring in mercury intoxication deserves consideration. The Indiana investigators remark that the constant transudation of serous fluid must carry sodium chloride from the blood, and if disturbed alimentation prevents the intake of salt, a reduction of blood chlorides must occur. The chief cause of hypochloremia, however, is undoubtedly loss of chlorides from the alimentary canal. Trusler and his associates have noted, as an item of practical importance, that colonic irrigations and gastric lavages practiced in cases of intoxication may also accelerate the depletion of chloride. They warn that, in any condition which calls for routine lavage of the stomach or the intestinal tract, the danger of reducing the blood chlorides should be borne in mind. The danger can no doubt be mitigated by including physiologic sodium chloride solution as a component of the irrigating fluids. Furthermore, it has been noted that hypochloremia, though associated with a relative acidosis, may produce gastric tetany. The tetany, therefore, is not a symptom of alkalosis but occurs in any condition of hypochloremia without direct relationship to the carbon dioxide combined in the plasma. Restoration of the blood chloride level relieves and prevents tetany but does not otherwise modify the course of mercury poisoning. There is some evidence that salt solution administered intravenously may be of value by forcing excretion from the kidney. In any event, in the human patient poisoned with mercury Trusler, Fisher and Richardson believe that the danger of a low level of blood chlorides should be borne in mind.

CLEAN SHIRTS

A modern hygienist has remarked that our conception of cleanliness has greatly changed with the advance in knowledge of the kinds of dirt, the degrees of dirtiness, and the nature of these dangers. We can no longer be satisfied, he adds, with physical or esthetic cleanliness, but must insist on biologic cleanliness. Invisible bacteria represent undesirable contamination quite as much as obvious matter out of place does. This indicates that in the ultimate analysis the services of a bacteriologist are required to make the distinctions between "clean dirt" and "dirty dirt." There is an implication, furthermore, that proper cleanliness affords protection against disease. Clean bodies require clean clothes. Heretofore the bacteriology of the latter has received comparatively little detailed consideration, but the improvements in the art of laundering are bringing the subject into somewhat greater prominence and may contribute something to the problem of the possible part played by clothing in the dissemination of microorganisms. Thus, a recent study [1] at the University of Nebraska in Lincoln indicates clearly the increment in bacteria that accumulate in undergarments as they are worn more frequently without washing. From an average count of about 400,000 per square inch after one use, the number increased to nearly 10,000,000 after a shirt was worn six times. The effect of laundering is represented by a reduced count of 1,000 or less. Washing alone is quite effective, but the drying process finishes the elimination satisfactorily. Sun drying is particularly potent. The organisms present on worn shirts were those common to air, soil and skin. *Micrococcus albus* (*Staphylococcus*) and *M. aureus* were most frequently found; streptococci also were often present. The large number of hemolytic types observed suggests that underclothing should be changed frequently and laundered by a process likely to check their development.

THE SUGAR CONTENT OF NORMAL BLOOD

In the clinical consideration of carbohydrate tolerance the observation of glycemia has taken precedence over the investigation of glycosuria. The determination of the sugar content of the blood has acquired greater significance than the estimation of the carbohydrate output in the urine. In view of this it has become increasingly important that trustworthy standards of comparison shall be established by which abnormal deviations from the physiologically permissible dextrose concentration of the circulating medium may be judged. This means that the possible influence of age, sex, physique, size, activity and particularly dietary habits must be evaluated before the given values can be accepted as universally applicable. The extent of physiologic, rather than pathologic, variability must be ascertained and taken into consideration in borderline decisions as to abnormality. All this involves a statistical evaluation of adequate quantitative data. In 1923 Gray [2] published the records of fasting values secured from 431 apparently healthy persons. The sugar content averaged 90 mg. per hundred cubic centimeters of blood. The unusual figures of from 120 to 160 mg., however, were reached in as many as 7 per cent of these "normal" persons. Recently Pierce and Scott [3] of Columbia University have greatly extended the study of the subject. From carefully selected data they conclude that the blood sugar of young, healthy men and women under basal conditions may vary between values of about 80 and 115 mg. per hundred cubic centimeters of blood. The true mean value probably lies between 95 and 99 mg. This statement presupposes that the determinations are made by the Shaffer-Hartmann or the Folin-Wu method. Such information will be welcomed by all who are called on to make diagnostic decisions.

1. Winegar, Gladys P.: Bacterial Content of Undershirts, J. Home Economics **20**: 349 (May) 1928.

2. Trusler, H. M.; Fisher, W. S., and Richardson, C. L.: Chemical Changes in the Blood in Mercuric Chloride Poisoning, Arch. Int. Med. **41**: 234 (Feb.) 1928.

2. Gray, Horace: Blood Sugar Standards in Conditions Neither Normal Nor Diabetic, Arch. Int. Med. **31**: 241 (Feb.) 1923.

3. Pierce, H. F., and Scott, E. L.: Variations in the Reducing Power (Sugar) of Normal Human Blood, Arch. Int. Med. **41**: 586 (April) 1928.

Association News

THE MINNEAPOLIS SESSION

Banquet for Rush Alumni

The Alumni of Rush Medical College will hold a banquet in Minneapolis on Wednesday evening, June 13, at the Minikahda Club. The banquet will be for both ladies and gentlemen. Reservations may be made with Dr. Robert I. Rizer, LaSalle Building, Minneapolis, or with Dr. Austin Hayden.

Harvard Alumni to Meet During Annual Session

The Alumni of Harvard University Medical School will hold a dinner in the Women's Club, Minneapolis, on Wednesday, June 13, at 7 p. m. Reservations for this dinner may be made at the Alumni desk near the registration booth.

Medical Veterans of the World War

The meeting of the Medical Veterans of the World War will be held in the Institute of Arts in Minneapolis, instead of at the Teco Inn Room of the Hotel Radisson, as formerly announced.

Phi Beta Pi

The annual alumni banquet of Xi chapter of Phi Beta Pi will be held at the Nicollet Hotel, Tuesday evening, June 12. All members of Phi Beta Pi who are in Minneapolis to attend the annual session of the American Medical Association are invited to this banquet.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Resolution About Certified Milk.—The division of public health of the California Federation of Women's Clubs held a public health breakfast, May 11, at San Diego, during the state meeting of the federation. The addresses concerned the milk supply of California. Dr. John L. Pomeroy, Los Angeles, spoke on "Preliminary Report on Milk Legislation Proposed by Southern California Public Health Association"; Mrs. Zaida Wray on "Milk Legislation Proposed by the California Federation of Women's Clubs," and Frederick P. Woellner, Ph.D., of the University of California, Berkeley, on "Pasteurization, an Essential Safeguard." A resolution was presented by Dr. Etta G. Gray, Los Angeles, state chairman of the division of public health of the federation before the state board of the federation, February 25, to the effect that the federation go on record as favoring a law which will allow only certified milk or pasteurized milk of grade A quality to be distributed for human consumption in the state of California. The resolution was adopted by the state board of the federation, and the legislative chairman was authorized to draft a bill embodying its provisions to be presented at the next session of the legislature.

Appointments and Promotions at California.—The dean's office of the University of California Medical School, San Francisco, announces, among others the following changes in the faculty, effective July 1:

APPOINTMENTS

Chauncey D. Leake, Ph.D., professor of pharmacology. Dr. Leake has been associate professor of pharmacology at the University of Wisconsin since 1920.
Dr. Raleigh W. Burlingame, instructor in medicine.
W. Simpson, Ph.D., instructor in physiology.
Dr. Robert S. Stone, instructor in roentgenology.

PROMOTIONS

Dr. Glanville Y. Rusk, professor of pathology.
Dr. Olga L. Bridgman, professor of pediatrics and psychology.
Dr. Herbert W. Allen, clinical professor of medicine.
Dr. Florence M. Holsclaw, associate clinical professor of pediatrics.
David M. Greenberg, Ph.D., assistant professor of biochemistry.
Leopold R. Cerecedo, Ph.D., assistant professor of biochemistry.
Dr. Robert Emmet Allen, assistant professor of medicine.
Jean Walker Macfarlane, Ph.D., assistant professor of psychology and pediatrics.
Dr. Frederick C. Cordes, assistant clinical professor of ophthalmology.
Dr. Ralph Rabinowitz, assistant clinical professor of medicine.
Dr. Howard W. Fleming, assistant clinical professor of surgery.
Dr. Edwin L. Bruck, assistant clinical professor of medicine.
Dr. George K. Rhodes, assistant clinical professor of surgery.
Dr. Curle L. Callander, assistant clinical professor of surgery and topographic anatomy.
Dr. Sidney J. Shipman, assistant clinical professor of medicine.
Dr. Robert S. Sherman, instructor in surgery.
Dr. Norman N. Epstein, instructor in dermatology.
Dr. George N. Hosford, instructor in ophthalmology.
Dr. T. Eric Reynolds, instructor in pharmacology.
Dr. Theodor L. Althausen, instructor in medicine.
Dr. Albert Lincoln Brown, instructor in surgery.
Milton I. Rose, instructor in physiology.
Dr. Dohrmann Pischel, instructor in ophthalmology.
Dr. Benjamin L. Freedlander, instructor in medicine.

FLORIDA

Society News.—Dr. Leonidas M. Anderson, Lake City, has been elected president of the Florida Railway Surgeon's Association for the ensuing year.——Dr. John A. Herring, St. Petersburg, addressed the Pinellas County Medical Society in April on "Treatment of Superficial Malignancies," and Dr. Harry L. Putnam, St. Petersburg, on "Medical Ethics."——Dr. Iver C. J. Wigg was elected president of the Lauderdale Memorial Hospital at the recent annual meeting.

Osteopaths Get Separate Board.—While the state medical association of Florida was giving attention to the passage of laws to keep its own house clean, the "drugless healers" took advantage of the moment to have a law enacted which gave them all of the privileges of doctors of medicine. The committee on legislation and public policy of the state medical association says that osteopaths formerly asserted that they did not perform surgical operations or use drugs or practice medicine. Section 7 of the act which created a board of osteopathic examiners provides that osteopaths are to be of the same rank and grade as physicians and surgeons of the other three schools of medicine designated as allopathic, homeopathic and eclectic. Section 13 has it that osteopaths licensed hereunder shall have the same rights as physicians or surgeons of other schools of medicine with respect to the treatment of cases or the holding of offices in public institutions. The committee says that it is possible now that the next state board of health will be under the control of osteopaths. The situation created by the new laws makes it more difficult for well trained physicians to secure the right to practice and makes it easier for osteopaths, chiropractors and other cults to practice. The committee believes that this legislation was allowed to become law because the medical profession failed to inform the public of its dangers.

ILLINOIS

Society News.—Dr. Mynie G. Peterman, Milwaukee, addressed the Winnebago County Medical Society, Rockford, May 25, on "Cerebrospinal Fluid in Children."——Dr. Lee C. Gatewood, Chicago, among others, addressed the Bureau County Medical Society, Princeton, May 8, on "Subphrenic and Liver Abscesses."——The Hoopeston Hospital, Hoopeston, has been closed.

Chicago

Embargo on Dogs.—Governor Small issued a proclamation, May 25, placing an embargo on all dogs moving in or out of Cook County in an effort to prevent the spread of rabies. The health commissioner of Chicago requests the cooperation of the public and of groups particularly concerned, in the solution of the rabies problem.

Lecture by d'Herelle in October.—The Chicago Society of Internal Medicine announces that Dr. F. d'Herelle, Alexandria, Egypt, will address a joint meeting of the society with the Institute of Medicine of Chicago in October. Dr. d'Herelle will give the Lane medical lectures at Stanford University, San Francisco, the week beginning October 22. (THE JOURNAL, February 18.)

Medical Society Sponsors Summer Clinics.—For the third successive summer the Chicago Medical Society has sponsored and arranged for a series of clinics for physicians as a part of its program of postgraduate instruction. The third series will be given, June 18-30, at the Cook County, Presbyterian, Augustana, Chicago Lying-in and Michael Reese hospitals, at the Municipal Tuberculosis Sanitarium and at Rush Medical College. The course is arranged for general practitioners primarily, although there will be clinics in every

specialty conducted by well known men of large experience. The registration fee for the course is $10. Admission to the clinics will be by card issued by the Chicago Medical Society, 185 North Wabash Avenue, room 518, where inquiries should be addressed (THE JOURNAL, April 21, p. 1297, May 19, p. 1632).

Safety Institute at Lake Delavan.—Under the auspices of the Chicago chapter of the American Red Cross, a life-saving institute will be held at Lake Delavan, Wis., June 14-23, for the purpose of giving instruction in first aid, life-saving, industrial safety, hygiene and sickness prevention. The director of the institute will be Dr. Harry W. Gentles. Physicians on the staff include Drs. Nathan S. Davis, III, Morris Fishbein, Arnold H. Kegel, Esther S. Nelson, Samuel C. Stanton and Howard Wakefield. The site for the institute is Lake Lawn, which has been donated by the Commonwealth Edison, the Peoples Gas, Light and Coke and the Public Service Companies of Northern Illinois. The athletic field is equipped with baseball diamonds, tennis courts, a golf course, croquet grounds and a bathing pool and pier. First aid institutes are to be held in a number of other states during June.

INDIANA

University Appoints Hospital Administrator.—Dr. Edward T. Thompson has been appointed administrator of the University of Indiana hospitals, Indianapolis, to succeed Robert E. Neff, who recently accepted a similar position at the University of Iowa. Dr. Thompson is a graduate of the University of Manitoba (Canada) Medical School. He has been the assistant superintendent of the Ancker Hospital of St. Paul, Minn.

Society News.—The one hundred and twenty-first semi-annual meeting of the Union District Medical Association was held at Richmond, April 26. Drs. Paul S. Johnson, Richmond, discussed "The Automatic Nervous System"; Webster S. Smith, Dayton, Ohio, "Infantile Paralysis"; Delbert O. Kearby, Indianapolis, "Acute Suppurative Sinusitis," and Basil M. Taylor, Portland, "Practical Infant Feeding."——Dr. Frank W. Cregor, Indianapolis, addressed the Tri-County Medical Society, Seymour, March 5, on "Eczema."——Dr. Charles R. Dancer, Fort Wayne, addressed the Noble County Medical Society, Albion, April 17, on "Endocrines with Special Reference to the Thyroid."——Dr. Clarence J. Broeman, Cincinnati, addressed the Jefferson County Medical Society, Madison, April 30, on "Indication for Radium in Cancer and Skin Diseases," illustrated with lantern slides.——Dr. Thurman B. Rice addressed the Huntington County Medical Society, April 3, on "New Methods of Vaccine Therapy."——Dr. Shelby W. Wishart, Evansville, addressed the May 11 meeting of the Miami Valley Hospital Pathological Society, Dayton, Ohio, on value of the electrocardiogram.——Dr. E. Funkhouser, Indianapolis, addressed the Carroll County Medical Society at Topeka, April 11, on "Intestinal Stasis."——Dr. Preston M. Hickey, Ann Arbor, Mich., addressed the Muncie Academy of Medicine, April 13, on "The Roentgen Ray in Diagnosis of Bone Diseases of Childhood."——Dr. Granville S. Hanes, Louisville, Ky., addressed the Vanderburgh County Medical Society, recently, on "Injections of Hydrochloric Acid for Treatment of Pruritis Ani and Vulva, Rectal Prolapse and Other Infections of the Terminal Bowel."——The county medical society secretaries held their first annual spring roundtable at Indianapolis, April 26.——Dr. Murray N. Hadley addressed the Indianapolis Medical Society, May 8, on surgical treatment of gallbladder disease; Dr. John A. MacDonald, abscess of the liver; Dr. Elmer Funkhouser, physiology of the liver with tests to determine function, and Dr. Raymond C. Beeler, cholecystography. The society was addressed, May 15, among others, by Dr. Ralph L. Lochry on "Splenomyelogenous Leukemia Treatment by X-Ray," and Dr. Arthur E. Guedel, "Some New Developments in Anesthesia."——Drs. Aloysius F. Lenzen and Thomas D. Keckich, Gary, have been appointed medical examiners in the aviation division of the U. S. Department of Commerce for the northern Indiana district.

IOWA

State Medical Election.—At the seventy-seventh annual meeting of the Iowa State Medical Society, Cedar Rapids, May 9-11, Dr. John H. Peck was made president elect; Drs. Pearl E. Somers, Grinnell, and Albert V. W. Hennessy, Council Bluffs, vice presidents, and Dr. Tom. B. Throckmorton, Des Moines, secretary, reelected. The president now is Dr. Thomas U. McManus, Waterloo, who will hold office throughout this calendar year. The next annual session will be at Des Moines, May 8-10, 1929.

Society News.—At the fourth annual meeting of the Iowa Heart Association, Cedar Rapids, May 11, Dr. Merrill M. Myers, Des Moines, was made president; Dr. Fred M. Smith, Iowa City, vice president, and Dr. Walter L. Bierring, Des Moines, chairman of the executive committee.——Dr. Mae H. Habenicht, Des Moines, has been elected president of the Iowa Society of Medical Women for the ensuing year; Dr. Jeanette Jongewaard, Ames, vice president; Dr. Florence D. Johnston, Cedar Rapids, treasurer, and Dr. Rosabell A. Butterfield, Indianola, secretary.——Dr. Jonas C. Lyter, St. Louis, will give the annual address before the Waterloo Medical Society, June 20, on "Medical Aspects of Chronic Thyrotoxicosis."——Dr. Henry S. Houghton, dean, State University of Iowa College of Medicine, Iowa City, addressed the Linn County Medical Society, Cedar Rapids, recently, on medical education in Iowa.——The tenth anniversary of the Iowa Clinical and Medical Society was celebrated, March 23, at Ottumwa. Thirty-five physicians from various cities were present. Dr. Russell C. Doolittle, Des Moines, was elected president.——The nurses' home at Mercy Hospital, Anamosa, was recently destroyed by fire.

MAINE

State Medical Meeting at Belgrade Lakes.—The seventy-fifth annual meeting of the Maine Medical Association will be held at Belgrade Lakes, June 18-20, with the Kennebec County Medical Society acting as host. A golf tournament will be played at The Belgrade, Sunday, preceding the meeting; prizes will be offered. Clinics will be held Monday and Tuesday mornings and afternoons at the Augusta General and Sisters' hospitals, the Central Maine Sanatorium and the state hospital. There will be a ladies' golf tournament, Monday afternoon, and a dinner, Monday evening, with special entertainment. At the banquet the address on "The Seventy-Fifth Anniversary of the Maine Medical Association" will be given by Dr. Daniel A. Robinson, Bangor. There will be a symposium on syphilis, Wednesday morning, and an oration by Dr. Lincoln Davis, Boston, in the afternoon on "Cancer of the Cecum." Other subjects will be discussed by prominent Maine physicians. The house of delegates will meet Monday evening and Wednesday afternoon. The hotel accommodations for this meeting are said to be among the best in the state. There are several cottages connected with the hotel which are available for parties in the order of application. The address by the president, Dr. Herbert F. Twitchell, Portland, will be given Tuesday afternoon. The committee appointed to revise the constitution and by-laws will report at this meeting and final action as to the adoption of the changes will probably be taken.

MASSACHUSETTS

Another Cancer Clinic.—Under the auspices of the state department of health, the Lawrence Cancer Clinic, at the outpatient department of the Lawrence General Hospital, was opened, April 24. It will be manned by thirty-five members of the medical staff of the hospital and conducted on the first and third Tuesdays of each month. Patients, after examination, will be referred to the family physician, to whom a letter describing the conditions found will be mailed. A social worker will follow each case to its disposal. Every physician in the vicinity is invited to participate in the work. Among the objects of the clinic are the assistance of needy patients in order that they may receive adequate treatment and the reduction of the time between the diagnosis and the inauguration of treatment.

Society News.—Dr. Willard C. Rappleye, New Haven, Conn., addressed the Essex South District Medical Society, Gloucester, May 8, on "Medical Training in Relation to General Education and Medical Practice."——Dr. Abraham A. Brill, New York, addressed the Massachusetts Psychiatric Society, Boston, April 20, on "The Psychiatry of the Present Day from the Standpoint of the Psychoanalytical School."——The reorganized Massachusetts Central Health Council held its first meeting, May 22, in Boston; Dr. Warren F. Draper, U. S. Public Health Service, Washington, D. C., addressed the meeting on "Accomplishments Through Cooperation Among Health Agencies," and Dr. George H. Bigelow, state commissioner of health, "Are There Any Unsolved Problems?"——Two cases of smallpox were reported, May 21, in Boston. These are said to be the first cases recorded in Boston since 1921. Both patients are negroes, and neither had been vaccinated.——Dr. Louis E. Phaneuf, Boston, has been appointed gynecologist and obstetrician-in-chief at the Carney Hospital.——Dr. George

R. Minot, Boston, addressed the students of Boston, University School of Medicine, May 24, on "Pernicious Anemia."

"Pay Clinics" Adopt Appointment System.—The director of the Boston Dispensary has announced that patients in the evening medical and dental clinics will be seen by appointment only and that they will be admitted to the clinic only to the extent that vacancies permit. This system was adopted to eliminate the long wait commonly experienced by patients. The Boston Dispensary evening clinics are said to be "pay clinics." Last year 40,000 visits were made to the various evening services.

MINNESOTA

Chiropractor to Penitentiary for Illegal Operation.—Through the assistance of the state board of medical examiners, Chiropractor Peter J. Stolurow, St. Paul, was arrested, tried, convicted and sentenced to four years in the penitentiary for having performed an illegal operation which resulted in the death of a young girl, March 15. He is reported to have pleaded guilty.

Personal.—Drs. Edmund M. McLaughlin and George H. Walker, Winona, have been appointed as official examiners for prospective air pilots by the medical director of the air regulations division of the U. S. Department of Commerce. ——The men's building of the General Hospital of the Indian Agency at Onigum was recently destroyed by fire. —— Dr. Naboth O. Pearce, Minneapolis, has been elected president of the Hennepin County Medical Society for the ensuing year.

Research on Diseases of Carnivorous Animals. — The University of Minnesota and the biologic survey of the U. S. Department of Agriculture are conducting a cooperative research on diseases of carnivorous animals which grew out of a previous study of diseases of foxes carried on for about three years by Dr. Robert G. Green of the University of Minnesota Medical School, Minneapolis, and associates. The present research is under the combined direction of Dr. Green and J. E. Shillinger of the bureau of biologic survey. The university group made an investigation of fox paratyphoid which was present on fox farms in Minnesota. This malady disappeared, but was followed by another, tentatively called epizootic fox encephalitis. The present investigation is concerned with this disease, which was first noticed in 1925 in animals that had been immunized with paratyphoid vaccine. Epizootic fox encephalitis has occurred on numerous ranches throughout the country in the last two years. Sick foxes may show convulsions, sleepiness, extreme weakness and paralysis and these symptoms have been reproduced in animals artificially infected from a sick fox. The mortality does not often exceed 15 per cent, but it has been as high as 40 per cent. About 400 animals have been used in transmission experiments, and about 1,400 sick animals have been studied. The aim is to develop a vaccine. Fox paratyphoid caused a mortality among young foxes as high as 60 per cent, but a bacterial vaccine was developed and this disease has not been encountered by the university group for about three years.

MISSISSIPPI

State Medical Election.—At the annual meeting of the Mississippi State Medical Association, May 8-10, Meridian, Dr. William H. Frizell, Brookhaven, was elected president; Drs. James H. Rush, Meridian, Thomas W. Reagan, Union, and Theophilus E. Ross, Jr., Hattiesburg, vice presidents, and Dr. Thomas M. Dye, Clarksdale, reelected secretary. The next meeting will be at Gulfport, May 14-16, 1929. At the annual meeting, among others, L. S. Frank, Montgomery, Ala., spoke on "Standard Milk Ordinance with a Plea for Uniformity in Procedure and Active Support of the Medical Profession"; Dr. Francis E. Lejune, New Orleans, "Value of Iodized Oil in Otolaryngology"; Dr. Seale Harris, Birmingham, Ala., "The Sugar Fed Child"; Dr. Oscar W. Bethea, New Orleans, "Status of Biologic Preparations in Therapeutics," and Dr. John H. Musser, New Orleans, "Problems of Uremia."

NEW MEXICO

State Medical Election.—At the annual meeting of the New Mexico Medical Society, Albuquerque, May 10-11, Dr. Franklin H. Crail, East Las Vegas, was made president-elect; Dr. Jacob C. Kisner, Clayton, vice president, and Dr. Leo B. Cohenour, Albuquerque, secretary-treasurer, reelected. The next annual meeting will be at Taos, June, 1929. The delegate to the American Medical Association is Dr. Harry A. Miller, Clovis; Dr. John R. Van Atta, Albuquerque, was chosen as the alternate.

NEW YORK

Society News.—The twenty-second annual meeting of the Women's Medical Society of New York State was held at Albany, May 21-22. Among others, Dr. Virginia C. Tannenbaum, Buffalo, read a paper on "Therapeutic Properties of Light Rays and Their Indications," and Dr. Mary J. Kazmierczak, Buffalo, on "Convalescent Measles Serum as a Prophylactic in Measles."——Dr. Howard T. Langworthy, Brooklyn, addressed the Nassau County Medical Society, Westbury, May 29, on hematuria.

Study of Maternal Mortality. — A statistical study of maternal mortality and stillbirths in the period 1921-1925 by the director of the division of vital statistics has been compared with a similar study for the period 1916-1920. The death rate for all puerperal causes in New York in the period 1915-1925 was 58.5 per 10,000 total births. One birth, therefore, in 171 resulted in the death of a mother. Comparing these five-year periods, exclusive of 1918, the mortality for puerperal septicemia declined 4 per cent and that from puerperal albuminuria and convulsions declined almost 14 per cent, while the mortality from puerperal hemorrhage increased 14 per cent. The death rates from other puerperal causes were almost identical in the two periods. While the comparison does not show any change in the death rate of the entire state, it shows an increase of 2 per cent in New York City and a corresponding decrease in the rest of the state. The rate in the cities upstate shows an increase of 6 per cent and in the rural regions a decrease of 26 per cent. The director, Joseph V. Deporte, Ph.D., believes that the increased hospitalization of rural mothers accounts largely for the decrease.

Patients in Mental Hospitals — Paranoiac Group Decreases.—The resident patient population of the New York state hospitals, February 1, was 43,823, and the number of patients on parole, 3,879. This was said to be an increase in resident patients in four years of 5,415, and in paroles of 559. The average increase in patients during the last ten years, according to Horatio M. Pollock, Ph.D., director of the statistical bureau, state department of mental hygiene, was about 1,000. The large increase (1,891) during the last fiscal year is especially significant, he says, as the hospitals are seriously crowded. The increase in 1927 was most marked in the arteriosclerotic, paretic, alcoholic, manic-depressive and dementia praecox groups. The only group that showed a marked decrease was the paranoiac. The upward trend in the arteriosclerotic group has been evident since 1912, and the only other group that has had as large an absolute increase in first admissions in the same period is dementia praecox. The trend has been slightly downward since 1918 in first admissions for general paralysis. However, these patients are coming into the state hospitals faster than they are going out. The treatment in the alcoholic group of first admissions markedly declined from 1917 to 1920, but since the latter year has been gradually increasing. Dr. Pollock believes that during the next ten years the state can look forward to an increase of 12,000 patients; his estimate is based on the increase in the last decade.

New York City

"Floating College" Head Sues University.—James E. Lough, Ph.D., who was head of the "floating college" which made an educational tour of the world last year, has filed suit against New York University for $100,000, it is reported, on the ground that his dismissal from the faculty was unjustified. Dr. Lough has been connected with New York University for many years, and for some time has been professor of experimental psychology at a salary of $7,200 a year. He is a graduate of Harvard and was on leave of absence from New York University during the educational cruise on the *Ryndam*. He is said to be preparing for a cruise with 500 male students to start in September.

This Is a Measles Year.—Since January 1, 19,000 cases of measles and 176 deaths have been reported, according to Dr. Louis I. Harris, health commissioner. At the same time last year, the number of cases of measles reported was 765 with thirteen deaths. Dr. Harris said this is a measles year, the period when the high wave of prevalence recurs. About 400 new cases were being reported daily. Dr. Harris also reported that there has been an increase in the deaths this year from influenza, pneumonia and epidemic meningitis, influenza and pneumonia causing, so far, 6,000 deaths, as against 4,641 last year at this time, and cerebrospinal meningitis 176, as against fifty-seven last year.

Abraham Flexner Resigns.—It was announced, May 24, that Abraham Flexner has resigned as director of the division

of studies and medical education of the General Education Board of the Rockefeller Foundation, effective July 1. Dr. Flexner has been associated with the General Education Board for about fifteen years, first as secretary and later as director of the division of studies and medical education. Previously he was associated with the Carnegie Foundation for the Advancement of Teaching. He is the author of "Medical Education in the United States and Canada," published in 1910; "Medical Education in Europe," 1912, and "Medical Education: A Comparative Study," 1925. During April and May, he was in residence at Oxford University, England, as Rhodes Memorial Lecturer. Dr. Flexner is 61 years of age.

Personal.—Dr. Charles W. Davis has resigned as superintendent of the Niagara County Tuberculosis Sanatorium on account of ill health.——Dr. James F. Van Fleet has been appointed surgeon in the eye department, Manhattan Eye, Ear and Throat Hospital.——The Hermann M. Biggs Memorial Fund gave more than $55,000, recently, to New York University to establish a professorship in preventive medicine in Dr. Biggs' name in the medical college.——Dr. Israel L. Glushak has been appointed associate attending otolaryngologist in the Hospital for Joint Diseases.——Dr. Condict W. Cutler, Jr., has been appointed attending surgeon at the Lincoln Hospital.——Mr. and Mrs. Samuel Sachs, on their golden wedding anniversary, gave a fund for a medical library at the Bedford Sanatorium of the Montefiore Hospital, and their children, Mr. and Mrs. Paul J. Sachs, Mr. and Mrs. Arthur Sachs and Mr. and Mrs. Walter E. Sachs, contributed $10,000 for the maintenance of the medical library in honor of their parents. The library is maintained for the staff of the hospital.——Dr. Edward H. Hume gave an address on "Some Aspects of Graduate Medicine, May 17, before the Alpha Omega Alpha Fraternity, New Haven, Conn.

OHIO

Dr. **Batson Goes to Pennsylvania.**—Dr. Oscar V. Batson, professor of anatomy, University of Cincinnati College of Medicine, has been called to the chair of anatomy in the graduate medical school of the University of Pennsylvania, where he will take up his duties in the fall. Dr. Batson was formerly a teacher at the University of Missouri and at the University of Wisconsin.

Eyesight Survey Called Commercial.—The Toledo Academy of Medicine has received complaints against the "Ohio Industrial Eyesight Survey and Service Bureau" and the "Kindy Optical Company," whose representatives are said to approach industrial concerns with the suggestion that an eyesight survey of employees be made by their "experts" without charge. When the employees submit to the examination, the survey usually brings out many "eye defects," and the employees are instructed to purchase glasses. These survey agencies are not connected in any way with the Ohio Industrial Commission. The "Ohio Industrial Eyesight Survey and Service Bureau" is sponsored by certain optometrists of Toledo. The scheme, the academy says, is distinctly commercial and against public interests. The education committee of the academy has written each industry in Toledo concerning this practice.

Physical Defects in Cleveland School Children.—A report issued by the bureau of physical welfare of the board of education of Cleveland indicates that 71.4 per cent of a large group of children examined had physical defects. The 72,961 children examined were in the kindergarten, first, third and fifth grades. The thirty-eight physicians and forty-eight nurses who made these examinations found, among other things, that 32,485 had defective teeth; 11,981 were undernourished; 7,326 had goiter; 3,117 had defective vision, 2,155 had defective hearing, and 1,629 had heart disease. The malnutrition found is said to be due largely not to poverty but to a choice of the wrong foods. This report indicates that there is a serious lack of knowledge of health in the adult population. Health education, therefore, is not only considered justified, but necessary, as the defects found are nearly all within the power of the family to control. The malnutrition found among these children does not mean simply underweight but true malnutrition as understood by the physician. Along with this report was a report on the examination of 19,930 children from 14 to 18 years of age who applied for permits to work; in them the percentage of the various defects found in the other large group of school children was increased, except in the case of tonsils and adenoids. Since so many of these physical defects could be prevented or controlled, the department of health education believes that this study demonstrates the necessity of more health work in the schools.

OKLAHOMA

Society News.—A symposium on advanced tuberculosis was presented before the Grady County Medical Society, April 6, by Drs. Phillip M. McNeill, Antonio D. Young, Lewis J. Moorman and Horace Reed, all of Oklahoma City.——The Ottawa County Medical Society met at its outing club on the Cowskin River, April 11; an outdoor dinner was served for thirty-five physicians, and an address was delivered by Dr. George L. Harrington, Kansas City, on "Psychology and Medicine."——Dr. Claude T. Hendershot, Tulsa, councilor, addressed the Creek County Medical Society, April 5, on "Fraternity of Medicine," and Dr. William J. Trainor, Tulsa, on "The Reliable Symptom of Heart Disease."

PENNSYLVANIA

News of Epidemics.—An outbreak of about eighteen cases of smallpox occurred in Somerset County, Pa., recently. In the last two years smallpox has not caused any deaths in Pennsylvania.——About 4,000 cases of influenza were reported from the city of Wilkes-Barre, Pa., about May 7.

Personal.—Charles H. Viol, Ph.D., director of the radium research laboratory of the Standard Chemical Company, Pittsburgh, died, April 6, of cancer. Dr. Viol has, for years, conducted research in radium.——Dr. Francis S. Ferris, Glenside, has been appointed chief medical examiner of the Philadelphia and Reading Relief Association, succeeding Dr. Casper Morris, Philadelphia, retired.

Allegheny County Cardiac Commission.—A report in the *Pittsburgh Medical Bulletin* on three years' work of the cardiac commission of the Allegheny County Medical Society states that this society is the first county society in America to appoint a heart commission. In its organization, representation was given to every large hospital and dispensary, the departments of health and education, the medical department of insurance companies and representatives of industrial medicine. The subcommittee on education has conducted a "heart week" in two successive years, and this year will give hospital instruction to small groups in wards, heart stations and dispensaries; it has also held meetings in hospitals and special meetings before the Allegheny Council Medical Society. Nine heart dispensaries are operated at present. A survey of beds available for patients with heart disease has been made. Active work in the schools has not yet been undertaken. The county society has furnished the funds for the work, and no attempt has been made to collect money from laymen.

Society News.—The subject of the address of Dr. Russell S. Boles, Philadelphia, before the Berks County Medical Society recently was "The Disease of Civilization," and not "Underlying Reasons for Development of Pulmonary Tuberculosis in Man and Lower Animals," as was stated in THE JOURNAL, May 19. The latter subject was presented by Dr. Herbert Fox, Philadelphia, before the April meeting of the Lancaster City and County Medical Society.——Dr. Theodore Diller, Pittsburgh, addressed a medical meeting at the state hospital for the insane at Danville, May 18, on "The Services of the Danville Hospital to the Mentally Ill and to the Community"; Drs. James A. Jackson and Ida Ashenhurst of the hospital staff on "Gynecologic Findings," and Dr. Horace V. Pike, also of the hospital staff, on "Hermaphroditis."——A subscription dinner to Dr. Alfred E. Cohn, New York, will be given at the Pittsburgh Athletic Association, Pittsburgh, June 19, on which day Dr. Cohn will give an address at the Carnegie Lecture Hall, under the auspices of the heart commission. Checks for the dinner ($4.50 a plate) should be made out to the treasurer of the Allegheny County Medical Society, Dr. Robert L. Anderson, and sent to Dr. Adolphus Koenig, Jr., 121 University Place, Pittsburgh.

Philadelphia

Foster Mothers Entertained.—The officers and directors of the Children's Bureau of Philadelphia and of the Associated Medical Clinic had as their guests, April 26, foster mothers who are caring for 250 children in 140 foster families for the bureau. The director of the associated medical clinic reported that wards of the children's bureau made 1,084 visits to the clinic last year.

Society News.—Drs. Percy S. Pelouze and R. Sergio Gonzalez addressed the Philadelphia Urological Society, May 28, on "Hydrogen Ion Concentration Studies of the Urethral Fluids During the Course of Gonorrhea."—The Physicians' Square Club, May 25, gave a dinner in honor of Dr. Edward B. Gleason, who has completed fifty years in the practice of medicine; Dr. Joseph C. Doane, superintendent of the Philadelphia General Hospital, was the principal speaker.——Dr. Edward A.

Schumann gave the address at the graduation of the nurses' training school of Chestnut Hill Hospital, and Dr. Wilmer Krusen, the address at the nurses' graduation of the Abington Memorial Hospital, May 23.

VERMONT

Experience of Hospital in Flood.—The Winooski River began to overflow on a Saturday afternoon last November and in a few minutes water was pouring into the tunnel connecting the state hospital at Waterbury with its power house, necessitating shortly the cutting off of the heat and light. It appears in the *Psychiatric Quarterly* that the hospital basement rapidly filled and in a few hours there was 6 feet of water in the main hospital building; in some buildings the water rose above the second floor. The 121 cows belonging to the hospital were drowned in their stalls, as were three teams of horses. The only available food was a few cans of milk, which were distributed by boats, and later milk brought to the hospital from a stranded train nearby. The Morrisville fire department, the U. S. Army, the American Red Cross, and many neighbors assisted the hospital. The task of cleaning out the mud that was everywhere that the water had been in the buildings was done by men from Stowe and Morrisville lent by the Burt Brothers, who worked for two weeks. The flood occurred when there were 872 patients in the hospital and 182 employees. Only one life was lost, and that patient died of heart disease.

WASHINGTON

Society News.—Dr. John M. Blackford, Seattle, will address the King County Medical Society, June 4, on "Peptic Ulcer: Comparison of Results of Ambulatory and Hospital Treatment After from Two to Ten Years," and Dr. Dorrell G. Dickerson, Seattle, "Lesions of the Spinal Cord."——Dr. Hulett J. Wyckoff addressed a joint meeting of the Thurston-Mason County Medical Society and the staff of the Shelton General Hospital, Shelton, April 19, on "Present Status of Infantile Paralysis."——The Pierce County Medical Society was addressed, May 22, by Dr. Harry Spiro, San Francisco, on "X-Ray Examination of the Heart as Viewed from Various Angles" and "A Safe Indication for the Use of Quinidine."

WISCONSIN

Licenses Revoked.—The state board of medical examiners reports that the licenses of the following physicians have recently been revoked following their conviction in court on the charge of manslaughter:

Alfred W. Trevitt, Wausau.
Charles Willard Blanchard, Janesville.
Marie Z. Vermeiren, Green Bay.
Leo Orrin Voorus, Milwaukee.
Sherman T. Lewis, Milwaukee.

Personal.—Dr. Richard C. Halsey has been appointed health officer of Lake Geneva for the ensuing year.——Dr. Robert E. Flynn, La Crosse, has been reappointed a member of the state board of medical examiners.——Dr. Willard S. Waite has been appointed health officer of Watertown, succeeding Dr. Frederick C. Haney, who has held the position for several years. ——Dr. Henry B. Hitz has been elected justice of the peace of Chenequa on Pine Lake in Waukesha County, and Dr. Joe Newton Sisk, Madison, has been elected justice of the peace of the village of Shorewood Hills.

Society News.—Dr. Karl H. Doege, Marshfield, addressed the Chippewa County Medical Society, Chippewa Falls, April 10, on "Basal Metabolism as a Therapeutic Aid in Diseases Other Than Toxic Goiter," and Dr. Roy P. Potter, Marshfield, on "Anomalies of the Ureters and the Kidney Pelves."——Among others, Dr. William T. Lindsay, Madison, addressed the Dane County Medical Society, April 19, on "Acute Pancreatitis" with case reports.——Dr. William W. Bauer, Racine, addressed the Racine County Medical Society, April 12, on "Child Welfare," and Dr. George H. Ewell, Madison, on "Clinical Significance of Ureteral Kinks and Strictures."——Dr. John S. Coulter, assistant professor of physical therapy, Northwestern University Medical School, Chicago, addressed the Rock County Medical Society, Beloit, recently, on "Physical Therapy in Relation to Surgery," and Dr. Samuel F. Haines, Rochester, Minn., on "Prospective Treatment of Exophthalmic Goiter"; fifteen guests from Winnebago and Walworth counties were present.——Dr. Francis D. Murphy, Milwaukee, addressed the Walworth County Medical Society, April 3, East Troy, on "Nephritis and Hypertension."——The Milwaukee Neuropsychiatric Society and the Milwaukee Academy of Medicine held a joint meeting, April 24; Dr. Annette M. McIntire, read a paper on "The Aim of Medical Psychology," and Dr. H. Douglas Singer, Chicago, on "Psychopathology in General Medicine."——The Wisconsin Urological Society held an all-day meeting, April 26. The morning was spent at St. Joseph's Hospital and the afternoon at the Marshfield Clinic Library. At the banquet in the evening, Dr. Ira R. Sisk, Madison, and Dr. Hermon C. Bumpus, Jr., Rochester, Minn., were the guests of honor.

GENERAL

Medical Aid for Congressmen.—The recent, sudden illness and death of Congressman Madden of Illinois, while on duty at the Capitol in Washington, has brought to the attention of Congress the need of providing for emergency treatment of its members. A bill has been introduced by Representative John J. Kindred of New York, who is a physician, which, if enacted, would provide that a physician and a nurse be appointed to be on duty while Congress is in session, and that a complete supply of medical equipment be installed in the Capitol for the emergency treatment of congressmen.

International Conference on Social Work.—The first international meeting of social workers will be held in Paris the first two weeks of July. Representatives of government and private agencies, religious groups and national and international societies will take part. There will be sections devoted to social work in public health, social work in industry, methods of social case work, training for social work and organization of social work. Three other conferences will cooperate, one on child welfare, one on housing and town planning, and the third on statutory and voluntary assistance.

National Board of Medical Examiners.—Since the establishment of the divided examination by the National Board of Medical Examiners in 1922 and up to April 1, 1927, Harvard had furnished more candidates (518) for examination than any other medical school; Pennsylvania was second, Johns Hopkins, third, Rush, fourth, and Columbia, fifth. The office of the board has been moved to 225 South Fifteenth Street, Philadelphia. During 1927, 272 physicians completed their credits in the board's examination. There will be examinations in parts I and II, June 13-15 and September 12-14.

Increase in Meningitis.—Reports of meningococcus meningitis to the U. S. Public Health Service in the early part of this year showed an increase in the number of cases over last year. From March 4 to April 28, forty-two states reported 1,036 cases, while during the corresponding period in 1927, they reported 477 cases. The deaths reported for the first seventeen weeks of the two years are available only from cities. The deaths in New York numbered 148, as compared with forty-six in the corresponding period last year; in Chicago the deaths were sixty-six and twenty-three, respectively; in Detroit, twenty-four and twelve; in St. Louis, sixteen and four; and in Cleveland, nine and three.

Philanthropists' Gifts to Education.—According to the Federal Bureau of Education, as reported in the Boston *Transcript*, money given to 975 institutions of higher learning from private sources during 1927 amounted to $168,000,000, whereas the total contributed to these schools by federal, state and city governments was $116,000,000 and the amount contributed by students, $50,000,000. Of these 975 institutions of higher education, 154 are under public control and 821 are under private control. In this survey, the federal Bureau of Education learned that among the professions medicine was third with seventy-seven schools, theology being first with 180 and law second with 136 schools.

Federal Board of Alienists Proposed.—Representative Black of New York has introduced a bill in Congress which proposes the appointment of a board by the President of twenty physicians of ten years' experience in mental diseases to diagnose and prescribe for veterans and to inquire into the methods for the chartering of insurance companies, with a view to drafting a policy that would provide treatment for the insured should he become mentally disabled and compensation for his dependents. Physicians on the board would have an annual salary of $25,000. In supporting the bill, Mr. Black said that this federal board of psychiatrists might advise a code of ethics to guide alienists in testifying in court, or it might encourage the states to adopt the Massachusetts system of state experts. Mr. Black submitted figures showing that in round numbers there were at present in institutions for the insane in the United States about 300,000 patients. He estimated that the economic loss due to mental disease alone was at least 3 hundred million dollars a year.

Cost of Medical Care.—In the *Monthly Labor Review*, published by the U. S. Department of Labor, Washington, D. C., a study is presented of the cost of medical service based

on the experience of 114 employees of the bureau of labor over a period of one year. The study shows that the average annual expenditures per employee for medical services were $98.92 for the group earning less than $2,000 a year; $146.13 for the salary group from $2,000 to $3,000, and $190.63 for the salary group of $3,000 and more. The average medical costs for all salary groups was $122.72, the average salary being $1,992.63. Expressed in terms of percentages, medical costs represented 6.2 per cent of salary in the lower salary group, 6.3 per cent in the middle group, and 5.5 per cent in the upper group. Medical costs, reduced to an annual basis, were in excess of $500 in a number of instances. Nineteen persons spent more than 10 per cent of their salaries for medical care, the costs ranging from 10.4 to 33.9 per cent. The term "cost of medical service," as used in the inquiry, covers all direct expenditures for health purposes, including the care of the teeth and eyes, medicines, hospital and nursing charges, and surgical appliances, as well as the service of physicians and surgeons.

Notes from a Bulletin on Smoke.—The New York City Department of Health and the National Conference Board on Sanitation, jointly, published a bulletin entitled "What Price Smoke." Facts and opinions on the harm to health and property caused by smoke and soot are expressed by officials of health departments and other organizations and editorials are quoted. The bulletin sets forth that a ton of soot falls every day on every square mile in the central section of Rochester, N. Y.; that smoke keeps out 30 per cent of Philadelphia's sunlight, and that Mount Vernon, N. Y., has from three to nine hours more of sunlight each month than Battery Park, New York, on account of the smoke there. The statement is made with the authority of the New Jersey Public Utility Information Committee that smoke costs each inhabitant of the United States $16 a year, and that the average cost of city residents is much higher. The *Scientific American* is said to have stated that the annual "tax" due to smoke and soot in Cleveland amounts to $6,000,000; in Cincinnati, $8,000,000; in Pittsburgh, $10,000,000, and in Chicago, $17,000,000. The bulletin also states that in a residential district of thirty blocks in St. Louis a two-thirds reduction of smoke was effected in a year through the educational efforts of inspectors of the smoke abatement league, which endeavored to aid every household in the district in adopting efficient firing methods.

Society News.—The Tri-Annual International Inventors Exposition and Conference will be held at Omaha, September 17-22; Dr. John H. Thomsen, Omaha, is general manager. All inventors may bring their patented articles or models for exhibition without charge.——The American College of Physical Therapy will hold its annual spring session at Minneapolis, June 11, during the annual session of the American Medical Association. There will be symposiums on education in physical therapy, and on physical therapy in the specialties, and a dinner will be held at the Hotel Radisson which will be addressed by Dr. Roy A. Barlow, Madison, Wis., on "Effects of Vitamin-Deficient Diet and Ultraviolet Irradiations on the Respiratory Mucosa and Special Senses."——At the annual meeting of the American Association for Thoracic Surgery, Washington, D. C., April 30-May 2, Dr. John L. Yates, Milwaukee, was elected president; Dr. Wyman Whittemore, Boston, vice president; Dr. Ethan Flagg Butler, Sayre, Pa., secretary, and Dr. Carl Eggers, New York, treasurer.——At the annual meeting of the American Laryngological, Rhinological and Otological Society, Washington, D. C., May 3-5, Dr. George Hill Hastings, Los Angeles, was elected president, and Dr. Robert L. Loughran, New York, secretary.——Dr. Ellsworth Eliot, New York, was elected president of the American Surgical Association, at the annual meeting in Washington, D. C., April 30-May 2, and Dr. Lincoln Davis, Boston, secretary. The next annual session will be at Cleveland, Ohio, in 1929.

Medical Bills in Congress.—H. R. 1, the tax reduction bill, has been reported out of conference. The Senate amendment providing for the deduction of traveling expenses was stricken from the bill.——H. R. 10441, relative to the mailability of poisons, came up on the House calendar but was objected to by Representative LaGardia of New York.——H. R. 13251, relating to the vocational rehabilitation of disabled and diseased residents of the District of Columbia, has been passed by the House with amendments.——H. R. 13645, establishing two federal narcotic farms, has been passed by the House.——H. R. 13784, providing for the rank, pay and allowances of a colonel, medical corps, U. S. Army, to the medical officer assigned to duty as personal physician to the President, has been reported favorably by the House Committee on Military Affairs.——H. R. 13902 provides for the examination and commitment of persons charged with crime in the District of Columbia who are alleged to be insane.——S. 777, the emergency officers' retirement bill, has been passed by both the Senate and the House over the veto of the President.——S. 3936, regulating the practice of the healing art in the District of Columbia, came up on the Senate calendar but was objected to by Senator Dill of Washington.——S. 4518, introduced by Senator Ransdell, Louisiana, provides for establishing a national institute of public health.——H. R. 12821, authorizing an appropriation of $15,000,000 for additional hospital facilities for veterans, has passed the Senate and has been approved by the President.——H. R. 11981, authorizing officers of the medical corps to account certain services in computing their rights for retirement, has been favorably reported by the Senate Committee on Military Affairs.

Congress Fails to Correct Discriminatory Ruling.—The amendment adopted in the Senate by an overwhelming vote, authorizing physicians to deduct necessary expenses in attending professional meetings, from their income tax return, was not accepted by the conference committee on the tax reduction bill. The action of the committee is a disappointment to the medical profession, which has long been the victim of discrimination, as such exceptions are allowed to other professions. Senator Copeland, New York, through whose efforts the amendment was adopted in the Senate, sharply questioned Senator Smoot, asking whether or not be found "any embarrassment as a conferee in dealing with amendments which we adopt in the Senate but which he opposes." To this statement Senator Smoot replied, "I have no embarrassment at all, because I do the bidding of the Senate and stand for the action of the Senate just as long as I can." Thereupon Senator Copeland said that Senator Smoot "had failed miserably to do the bidding of the Senate in connection with this bill." Senator Copeland said, "It seems very strange to me . . . that, as to the amendment relating to the traveling expenses of professional men, when it passed by such an overwhelming vote in the Senate, the conferees of the Senate were unable to make any impression upon the House conferees." Under the rules of the House, conferees are required to explain in writing to the House their position with respect to each amendment. The statement of the House conferees on this amendment was as follows:

> The Senate amendments are intended primarily to permit doctors and other professional men to deduct their expenses in attending meetings of their organization. These expenses usually are not deductible under the existing law, and the effect of the amendment was to authorize nonbusiness deductions.

The failure of Congress to correct, by direct legislation, the discrimination against physicians due to rulings of the commissioner of internal revenue, leaves the matter in such a position that hope of immediate relief lies only in the hands of the commissioner of internal revenue. It is within his authority to reverse the ruling of the department, which has resulted in discrimination against physicians.

HAWAII

Medical Election.—At the annual meeting of the Hawaii Territorial Medical Association, April 21, Hilo, Dr. James R. Judd, Honolulu, was elected president and Dr. Forrest J. Pinkerton, Honolulu, was reelected secretary. The next annual session will be in Honolulu, in April, 1929.

Report of Territorial Board of Health.—The report of the president of the board of health of Hawaii for the year ending June 30, 1927, is a 196 page pamphlet, containing a summary by the president, Dr. Frederick E. Trotter, Honolulu, and separate reports of the heads of the different departments and districts. Satisfactory health conditions prevailed in the territory, which has a population estimated at 333,420, a slight increase over the previous year. There was a decided drop in the birth rate from 38.08 to 27.16 per thousand of population; in the death rate from 12.44 in 1926 to 11.87, and in the infant mortality rate from 104.21 to 95.97. There was an increase in typhoid from seventy-six cases in 1926 to 152 cases. Measles showed the greatest increase, there being 1,481 reported cases as against 362 in 1926. Among the 2,006 cases of tuberculosis registered, 1,062 were new cases. The president recommends the establishment of a preventorium on each island. One has been established on Maui, and steps have been taken to establish one on Oahu. Tuberculosis clinics were held weekly in Honolulu and at fairly regular intervals in the country; chest clinics have been held at various places. The board of health employed twenty-four nurses, four of whom were for tuberculosis work. Government physicians examined 4,447 children in the public schools in Honolulu, and medical school inspections were made throughout the territory. Three osteopaths and one chiropractor were licensed to practice in the territory during the year. Funds appropriated for the health

department for the two year period, 1925-1927, exceeded $2,300,000. A new $1,000,000 hospital for the insane is under construction at Kaneohe; progress has been slow, apparently because of insufficient available funds. There were three cases of human plague, all fatal. More than 140,000 rodents were obtained and most of them examined macroscopically for plague, but only one apparently was found positive. Twelve new so-called health centers were established during the year, making a total of sixty-eight, of which the board of health conducts thirty-nine and the division of maternal and infant hygiene, cooperating with plantations, twenty-nine. These are chiefly for the purpose of consultations promoting the health of infants and preschool children. The government employed thirty physicians, all but two of whom reside in their respective districts throughout the territory. Their duties were the treating of the indigent sick; the inspection of public schools, with the correction of physical defects in the children; the keeping of records of marriages, births and deaths; the investigation of unattended deaths; immunization against typhoid and diphtheria, and the treatment of trachoma. The reports of these physicians scattered throughout these islands are part of this general report. The report of the director of the bureau of leprosy shows that thirty-nine patients were admitted at the leper settlement at Molokai from the Kalihi Hospital. At the close of the fiscal year, 497 patients remained at the settlement, as compared with 510 remaining on June 30 of the previous year. At the Kalihi Hospital, sixty-six patients were admitted during the year, and at the close of the year there remained 157. The number of admissions was much lower than for the average of the previous five years. In all 6,252 injections of chaulmoogra or hydnocarpus compounds were given to leprosy patients during the year.

FOREIGN

Vagabondage Among Russian Children.—The *Isvestiá*, the official organ of the soviet government, reports a decrease of vagabondage and crime among children in Russia, as a result of better economic conditions and of measures adopted by the government and private associations. At the end of 1926, the number of homeless children is said to have declined to 125,000, and in the summer of 1927, to 80,000. During the fall of 1927, in most cities of the U. S. S. R., the child welfare societies undertook a crusade against vagabondage among children. It is not possible, the *Isvestiá* says, to estimate exactly the number of homeless children at present, as it is subject to constant variations owing to the instability and nomadism that prevail, but it is certain that there are still dozens of thousands. The largest "troops" of vagabond children are found in the region north of the Caucasus.

British Medical Association Meeting.—The ninety-sixth annual meeting of the British Medical Association will be at Cardiff, Wales, beginning July 20, under the presidency of Sir Robert W. Philip. Sir Ewen J. Maclean, the incoming president, will deliver his address, July 24. The annual representative meeting will be July 20, and the statutory annual general meeting, July 24. The annual dinner will take place July 26; the conference of honorary secretaries, July 25, and the official religious service, Tuesday. The annual exposition of appliances, food, drugs and books opens July 23. Saturday will be given over to excursions. The scientific sections meet Wednesday, Thursday and Friday. In a notice published as a supplement to the *British Medical Journal*, it appears that there was an increase in the membership of the association in 1927 of 1,275, making the total increase in the last five years more than 9,000 members. The last year was also successful from the financial standpoint, and the balance of income over expenditure carried to the surplus account amounted to more than £1,935, making the total surplus about £190,000. The subscriptions to the association's journal increased more than 3,060. The journal published during the year 2,882 pages of advertisements; 2,646 literary pages and epitome, and 532 pages of supplement. The amount required from the subscription account to cover the cost in production and issue of the journal was £13,718.

CORRECTION

Goat Serum for Measles.—Dr. L. J. Halpern, author of an article, entitled "Prevention and Modification of Measles by Measles Antidiplococcus Goat Serum" (THE JOURNAL, April 7, page 1109), writes concerning line 11 of this article that the sentence which reads, "Rietschel used convalescent human measles serum as early as 1918" should have read to the effect that Rietschel used serum (blood) from adults who have a history of having had measles prior to the withdrawal of their blood serum.

Foreign Letters

LONDON

(From Our Regular Correspondent)

May 12, 1928.

The Harvey Tercentenary

Arrangements are being made by the Royal College of Physicians to celebrate during the week beginning May 14 the tercentenary of the publication of Harvey's treatise on the circulation, "Exercitatio Anatomica de Motu Cordis et Sanguinis in Animalibus." More than a hundred delegates are coming from all parts of the world to commemorate the production of this epoch-making contribution to medical science. They will be received by the king at Buckingham Palace on the morning of May 14. In the afternoon there will be a reception of delegates and distinguished guests by the president at the Royal College of Physicians. After the presentation of addresses by delegates and the admission of honorary fellows, selected speakers will deliver eulogies on Harvey. A dinner to the delegates will be given by the Company of Grocers at their hall. The Prince of Wales will be present at a conversazione of delegates, guests and fellows at the hall of the Merchant Tailors Company. There will be a demonstration of recent additions to our knowledge of the circulation at University College, followed by a luncheon at St. Bartholomew's Hospital (to which Harvey was physician). A visit will be paid to Merton College, Oxford, of which Harvey was warden, and to Caius College, Cambridge, where he graduated. Representatives are coming from the medical and scientific societies of the United States, France, Germany, Italy, Belgium, Holland, Switzerland, Sweden, Austria, Denmark, Finland, Hungary, Czechoslovakia, Norway, Poland, Greece, Russia, Roumania, Japan and Argentina, as well as from the dominions and British universities.

William Harvey was born at Folkestone, April 1, 1578. He was educated at King's School, Canterbury, and at 16 entered Caius College, where he graduated in arts in 1597. After leaving Cambridge he studied at the University of Padua under Fabricius de Aquapendente. He was appointed physician to St. Bartholomew's Hospital in 1609 and in 1615 became Lumleian lecturer at the Royal College of Physicians, an office he held for life. It was during the second year of his lectures to the college, in April, 1617, that he first stated his view on the circulation of the blood. Twelve years later he gave his discovery to the world in a quarto volume of seventy-two pages containing two pages of diagrams.

Difficulties in the Medical Examination of Emigrants for Canada

In previous letters the decision of the Canadian government to send Canadian physicians to this country for the purpose of examining intending emigrants was reported: also the fact that this method had to be modified so that in certain outlying places British physicians still examined the emigrants, but the examination papers were supervised by the Canadian physicians in this country. Even with the method modified—in response to a widespread public demand—by the Canadian Health Department in London, there is still much difficulty. The chief criticisms put forward are: 1. The distance emigrants have to travel to the nearest center, although there are more than 350 centers in the British isles, involving loss of a day's work and expense on railway fares. 2. The undesirability of some of the examination places, which are stated to embarrass the women. 3. Inconvenient intervals and unreasonable hours at which some examinations are held. 4. Slowness of operations, whereby emigration is retarded. The intentions of the Canadian government are admitted to be good, as they are designed to

prevent the rejection of emigrants on landing in Canada after their homes have been broken up and expense has been incurred. But it is difficult to understand why a competent local physician, who has perhaps known the examinee all his life and from whom women and children will not shrink, cannot conduct an examination satisfactory to the Canadian authorities.

The Combating of Maternity Mortality

The concern caused by the fact that the mortality from maternity, unlike that from disease, has not diminished, and the steps proposed to be taken have been mentioned in previous letters. The government is alive to the matter, for the ministry of health has decided to appoint a representative maternal mortality committee. A circular has been issued to the maternity and child welfare centers throughout the country stating that it is desirable that there be an investigation in every area of all maternal deaths and of all cases of puerperal fever, by a competent and experienced medical officer, with a view to ascertaining more exactly the causes leading to maternal mortality. The minister of health regrets that such inquiries have so far been adopted in very few areas, and it occurs to him that one reason for this hesitation may be that it has not heretofore been apparent to the local authorities what practical results were to be expected. He desires therefore to explain that his object is, with the help of the local authorities and of the physicians throughout the country, to obtain a mass of information not heretofore available, as to the causes of death in a large number of cases. In order that such information may be properly classified and compared, and the results put in form which will be of service to health officers and the medical profession generally, it is necessary that investigations should be directed to certain definite points and, when completed, considered by some competent body which will issue a report. The British Medical Association has already been consulted and has expressed general approval of the objects of the proposed investigations. The voluntary maternity hospitals have already decided to carry out an investigation and a central standing committee has been appointed. The queen has sent a message expressing her interest in the committee.

British Museums

The Carnegie United Kingdom Trustees have issued an important report on British museums as a factor in education, which has been made to them by Sir Henry Miers, formerly vice chancellor of the University of Manchester. In a short historical note he points out that since Elias Ashmole's gift to Oxford University in 1677 there has been a steady development. During the eighteenth and nineteenth centuries many societies came into existence and gathered collections, some of which had been transferred to public bodies by the middle of the nineteenth century. The richest period of museum development was perhaps the forty years from 1880 to 1920. Of the public museums started during that time, nearly half originated from private collections. Only recently has an attempt been made to break away from the collecting bias and to establish museums for public rather than for personal purposes and for educational needs. Regarding museums from this point of view, Sir Henry shows that their distribution in the British isles is haphazard. While twenty-three English cities with populations ranging from 9,000 to 920,000 have three or more museums, big cities like Croydon and Barrow have none. This is still more surprising when it is seen that small towns and even villages of less than 2,000 inhabitants have interesting museums. Those learned societies which maintain museums rarely have sufficient funds for upkeep. More than forty have given up the struggle and have passed into the hands of municipalities. Among the conclusions reached in the report are the following: Every museum, instead of following a policy of indiscriminate acquisition, should adopt a definite restricted policy based on the maximum service that it can render to its own district. The museum should be under the administration of a full-time curator. The education authorities should be assisted by the encouragement of organized visits, loans to schools and lectures. Much greater encouragement and better facilities should be given to research workers.

With this report is issued another by Dr. E. E. Lowe on modern American museum practice. Dr. Lowe was sent to America, where he spent two months visiting more than a hundred different institutions. He reports that there are in the United States about a thousand museums of one kind or another, almost half of which have been founded by colleges and universities, and the rest by societies and private persons. They seem rarely to have been established by municipalities. Dr. Lowe finds that, owing to the vast area of the United States and to the great distances separating many of the cities, the larger museums are wider in scope and more ambitious in aim than is usual with English provincial museums. The buildings are also newer, larger and better equipped.

The Dangers of Tetra-Ethyl Lead in Gasoline

In a previous letter (THE JOURNAL, April 14, p. 1229) the apprehension aroused in this country as to the dangers from the use of tetra-ethyl lead in gasoline was described and the appointment by the government of a committee to inquire into the possible dangers to health from the use of tetra-ethyl lead or similar lead-containing compounds in gasoline was announced. The committee consists of leading physiologists, pharmacologists, toxicologists and chemists. After hearing evidence it will report what precautions, if any, are desirable for the protection of the public in connection with the use or handling of ethyl gasoline. At the first sitting, evidence was given on the part of the American producers of ethyl gasoline. Dr. Graham Edgar, director of research of the Ethyl Gasoline Corporation, New York, said that the corporation had endeavored to determine the facts concerning all phases of the use of tetra-ethyl lead in gasoline and had placed the full results of its researches at the disposal of the committee. In 1924, at the works in Bayway, N. Y., there were five fatalities and a number of cases of poisoning among men engaged in developing a new process for the manufacture of tetra-ethyl lead. As a result of that tragedy the phrase "looney gas" was coined. The tragedies had nothing to do with ethyl gasoline. In connection with the exhaust-gas problem, the United States Bureau of Mines exposed animals from three to six hours daily to exhaust gases from an engine burning ethyl gasoline. The results showed no storage of lead or symptoms of poisoning after a period of eight months. In tests on human beings, different groups of men had been exposed as severely as possible to the use of ethyl gasoline in one way or another. No evidence of lead poisoning or other injury to health could be found. When ethyl gasoline was introduced into new territory the corporation found numerous reports of alleged injuries from its use, while from territories where it was extensively used such reports were negligible. Reports had been thoroughly investigated whenever possible and in no case had there been any substantiation of the rumor that injury could be traced to ethyl gasoline. There had appeared in the *Daily Mail* the result of an investigation carried on by Dr. Myles Coplans. Two mechanics who had for a short time dealt with cars using ethyl gasoline were subjected to medical examination and one was found to be excreting a small amount of lead. Certain changes in the blood picture of both mechanics were reported. No conclusions could be drawn from such fragmentary data. Numerous inaccuracies could be pointed out in the report, but the remote connection of the data with the subject of ethyl gasoline seemed to render this unnecessary.

Mr. A. M. Maxwell, vice president and sales manager of the Ethyl Gasoline Corporation, said that the sales of ethyl gasoline in Canada and the United States for the first two months of this year, as against the first three months of last year, represented an increase of more than 75 per cent. Last year the corporation supplied tetra-ethyl gasoline to thirty-six of the major oil companies and did not receive a single complaint of injury to health from the users. Mr. H. S. Tegner of the Anglo-American Oil Company, which retails Pratt's spirit, said that his company had thoroughly satisfied itself of the safety of the tetra-ethyl mixture before marketing it in England.

Mr. Pye of the British air ministry said that exhaustive experiments had been carried out in the laboratory in bench tests and during long evolutions of two squadrons. At no time had there been any report of illness among those handling ethyl gasoline. In high speed aero engines the proportion of tetra-ethyl used in the gasoline was often considerably higher than in the mixture sold commercially.

Sex Hygiene for Boys

It is the custom in England to send boys of the better classes to public schools (i. e., boarding schools) at the age of 13 or 14. The advantages of a public school education are great not only in intellectual training but still more in the formation of character. But there is the disadvantage of removing a boy from home influences at the critical period of the onset of puberty. Mr. R. Cary Gilson, headmaster of King Edward's School, Birmingham, has written "A Letter to Parents" which is published as a pamphlet and is sent to parents by other headmasters with the usual entrance forms recommending it for use in instructing the boy before he leaves home. Mr. Gilson insists that the question is not one of physiology alone but of morals as well and opposes the idea that the mere reading of scientific textbooks can afford any security for the right conduct of life. He also deprecates an abandonment of reticence in regard to matters of sex, which springs from the instinct of modesty and is the very foundation of good morals. *Maxima debetur pueris reverentia,* and therefore there are subjects which do no harm to adults but are quite unsuitable for the young, not because it is desirable to keep them in a "fool's paradise" but because they cannot view them in true perspective. This particularly holds for the three or four years following puberty.

That great surgeon Sir James Paget laid it down as a singular fact that the young of civilized races require to be taught the facts of sex. At any rate boys will certainly learn them, and if not from their parents and teachers from the least desirable of their acquaintances. Therefore fathers should not shrink from the duty of instruction without reckoning the danger of acquiring bad habits from sheer ignorance. At the onset of puberty the boy should be told to expect changes in himself both in body and in mind which may perplex him, and he must be made aware that they imply the approach of manhood and its responsibilities. That the race is continued by physical union of the sexes and that the organs which he has been taught to protect and respect are specially given for this end must be explained sufficiently for the enjoining of a continuance of this self-respect. But a new motive is now provided by regarding this as something not only due to himself but to the maiden he may some day marry. Mr. Gilson's great experience leads him to place no reliance on the ascetic ideal as a motive for chastity and self-control but to have immense confidence in the ideal of a happy marriage to which such self-control is an indispensable preliminary. The boy must be made to see that self-control begins in the mind and that he must not allow thoughts to run riot. Among other means of preventing this are vigorous exercise and games. On the purely physical side there is much virtue in cold water, plain food, an early supper and a very firm mattress, on which the boy should rest on his side, not flat on his back. Boys should be told of the unpleasant reminders of physiologic disturbance apt to occur at this age during sleep. So long as they are wholly involuntary, the less thought and attention they receive the better. If the boy has fallen into the habit of self-abuse, firmness, sympathy and knowledge of his character will indicate the tone to be pursued. He should be made to regard the practice with some horror but must not be driven to despair.

PARIS

(From Our Regular Correspondent)

April 25, 1928.

An Outbreak of Paratyphoid in Subjects Vaccinated Against Typhoid and Paratyphoid

MM. Crouzon and de Sèze gave recently before the Société médicale des hôpitaux an account of an outbreak of paratyphoid B that occurred in their services in the Hôpital de la Salpêtrière, in subjects that had been subjected, less than two years previously, to vaccination against typhoid and paratyphoid A and B. The cases were extremely mild, but the nature of the disease was confirmed by blood cultures, and was established beyond all doubt. While recognizing the fact that certain subjects may be rebellious to all forms of immunity, it was found on investigation that all the patients had received but one injection of vaccine, in place of the two prescribed by the Pasteur Institute. M. René Bénard, who is in charge of the antityphoid vaccination service in the Hôpital Cochin, emphasized the absolute necessity of two vaccinations in order to make the immunity fairly certain. M. Flandrin mentioned having observed a very similar outbreak in Boulogne, in which case, too, the patients had received only one injection. He believes that a larger number of injections is needed, beginning with weak doses and increasing the dosage steadily. M. Martin, of the army medical service, expressed the same conviction, holding that at least three injections are needed. M. Boidin suggested that an account must be taken of the idea of epidemicity and of the fact that, under certain conditions, massive inoculations of typhoid bacilli may defy all immunity.

The Persistence of Malaria in Certain Regions of France

In various regions in which colonial soldiers affected with malaria were encamped, during the war, especially in the Argonne and in the Meuse sectors, cases of malarial fever have been noted among the civil population. The question has been raised whether indigenous species of mosquitoes have not adapted themselves to serving as host for *Plasmodium malariae.* In that case, France, which has known age-old foci of malaria only in Corsica and in the island of Noirmoutier (Vendée), would be menaced with a gradual invasion of malaria. In the Société de médecine et d'hygiène tropicales, before which data on the subject derived from the Aisne and the region of Bar-le-Duc have been presented by M. Gallais, the opinion was expressed that the cases of malaria should be studied with great care and in all their aspects. M. Nattan-Larrier and M. Marcel Léger emphasized the need of collecting mosquitoes from these regions and examining them for the presence of malarial organisms.

New Sanitary Regulations with Regard to Inhumations and Exhumations

A decree effective May 15, 1928, adopted after deliberation by the Conseil supérieur d'hygiène publique de France, establishes the sanitary regulations to be observed in burial operations, the transportation of bodies, exhumations and reinhumations, which heretofore have been controlled by various legal enactments; notably, the decree of April 15, 1919, and

the ordinance of Aug. 7, 1916. The new decree combines all previous regulatory enactments, reproducing the regulations that are still in force and harmonizing those that were, in a measure, contradictory in their import. The new text contains the following innovations: It adopts the requirements of the Conseil supérieur d'hygiène publique de France as regards hermetically sealed coffins and the use of antiseptic materials. It does away with the compulsory presence of physicians at exhumation operations. It establishes the charges involved in embalming, and places the responsibility for payment on the relatives of the deceased, providing definitely for the mode of recovery. Taking account of the numerous urgings on the part of the Société pour la propagande de l'incinération, it reduces the necessary formalities and the expense necessitated by cremations, in order to place this practice at the disposal of all, in the interest of public hygiene.

Deaths

French ophthalmology has suffered a great loss in the death of Dr. Félix Legrange, professor at the Faculté de médecine de Bordeaux, corresponding member of the Academy of Medicine and of the Academy of Sciences. He was 71 years of age, and after his retirement he had taken up his residence in Paris. In addition to his well known publications, such as Précis d'ophtalmologie, Atlas d'ophtalmologie, and Traité des tumeurs de l'oeil, he was distinguished for his discovery of a treatment for glaucoma, now universally known, which consists in the creation, in the cornea of the glaucomatous patient, of an oblique slit, forming a drain and permitting the gradual and continued evacuation of the aqueous humor without causing displacement of the retina.

Dr. Landolt, another eminent ophthalmologist, who succeeded his father, in Paris, and had acquired, as did the father, a high reputation in his specialty, lost his life when a sailboat, in which he was enjoying an outing on the Seine, was capsized by the wind. The accident nearly cost the lives of his two children, who accompanied him; but, being a good swimmer, he succeeded in saving them by shelving them on the upturned boat, but then he suddenly sank, and thus far it has proved impossible to recover the body.

BUDAPEST

(From Our Regular Correspondent)

May 5, 1928.

The Principle of Prevention in the Fight Against Quackery

Dr. Joseph Melly, lecturer to the University of Budapest, read a paper at a recent meeting of the Royal Medical Society on the principle of prevention in the fight against quackery. He started his paper by describing two types of quacks. The first type includes old members of the family, friends and neighbors, who, from misplaced love of their fellow beings, give advice to their sick friends. It would be very difficult to fight this type of quackery; the more so as we cannot decide the boundary between first aid and quackery. In most countries the law concerning hygiene prescribes that everybody most offer first aid in the form of advice, deeds, or otherwise in case of an urgent necessity. Quite different from these are the second type of quacks, who do their business for profit. These are the professional quacks, who exploit the credulity and lack of education of their fellow creatures. There are no approximate data with regard of the number of quacks. German authors write that there are about 1,300 quacks in Berlin, and about 12,000 in the German reich.

Magisterial activity against quackery could take one of two directions. By one method the endeavors would be to enlighten the general public by raising the standard of education. The other method provides for dealing with single cases. It is surprising how deficient are the laws for the control of quackery all over the world. German legislation took a decidedly retrogressive step when it codified the liberty of healing in 1869. The supporters of this bill, which was passed by the reichstag, argued that no occupation, not even the practice of the healing art, can be privileged. The sequels proved the fallacy of this reasoning, because, from 1869 to 1928, the number of quacks in Berlin rose from twenty-eight to 1,349. It is no wonder that German legal experts speak of the 1869 error as the "privilegium odiosum Germaniae."

In England there are no regulations restricting the liberty of the art of healing, but in England there never have been any such restrictions and no retrograde step has been taken. Furthermore, the Medical Act, issued on the 2d of August, 1858, did not bring any alteration to the advantage of quacks. On the other hand, it drew a sharp line between qualified and unqualified persons. Only the holders of medical diplomas can be registered, can assume the title of doctor or can claim fees through the law.

In Switzerland a law which was sanctioned in 1877 entrusted the regulation of medical practice to the magistrates of the separate cantons. In Austria, the penal code constituted in 1857 enacts that those practicing medicine without competent qualification commit an offense which may be punished with imprisonment. If they cause the death of a patient they are prosecuted for manslaughter. Individuals found guilty of quackery may be exiled from the country. The supplementary order issued in 1887 prohibits even nonindustrial quackery.

In France there was already in 1301 a law in force which prohibited quackery. In 1707, Louis XIV issued a newer enactment which strictly connects the art of healing with the medical profession. This order was respected even during the revolution.

The question is settled also in Italy. As early as in 1140, Roger, king of Apulia and Sicilia, issued an order to the effect that all those who wish to have to do with the healing of sick people should report their intention to the magistrates. Offenders were punished with the confiscation of their wealth and by imprisonment. The ministerial order issued 700 years later corroborated that order in all its details.

In Belgium the prevalent laws punish even gratuitous quackery. In the Netherlands, the law passed in 1865 enacts that quackery involves the application of fines, while in case of relapse offenders get imprisonment. In Russia a ukase was issued in 1784 forbidding quackery in all its forms. The penal code issued in 1845 increased the punishment applied for quackery. Also in the northern countries of Europe and in the Balkan states special laws provide for reserving the right of practicing medicine to duly qualified medical men. In Brazil the law passed in 1897 and in Japan a paragraph in the penal code forbid quackery. In China, legislative measures against quackery by nonqualified medical practitioners were taken in 1644. In Hungrary the law passed in 1876 clearly defines that in the country the healing art can be practiced only by individuals who are in the possession of medical diplomas granted by home or foreign universities (in the latter case these have to be certified by a home university).

As is seen from the foregoing, due measures are taken almost all over the world for the checking of quackery. Why is it, then, that quacks still flourish even in countries of the highest culture? According to Dr. Melly, considerable quackery is carried on also by dental technicians, masseurs and auxiliary personnel in hospitals, sanatoriums, and bathing establishments, and by barbers, druggists and cosmeticians. Against these, new legislative regulations should be enacted. If any form of unqualified medical advice and treatment were punished with adequate severity, if children were taught in schools the elements of hygiene and if they were warned against quacks, quackery might cease.

Postgraduate Medical Courses in Hungary

The Central Committee of Postgraduate Medical Teaching has arranged a number of courses. In Budapest there will be lectures on calculus of the kidney, anemia, ileus, and food poisonings from June 4 to June 15. From June 18 to June 23 a course will be given in the domain of treatment of diseases of infants. From June 11 to June 23, postgraduate courses in dentistry will be given. In addition, there will be four weeks of practical demonstration in the different clinics of the university. Information may be obtained from the Central Committee of Postgraduate Medical Courses, Budapest, VIII, Maria utca 39.

Count Apponyi, Honorary Doctor of the Budapest University

Count Albert Apponyi has been proposed by the minister of public instruction to receive the title of honorary doctor of law of the Budapest Pázmány Péter University. The governor of Hungary, Nicholas Horthy, acceded to the proposition. The University of Budapest conferred on Count Apponyi the title of honorary doctor of medicine, with the approval of the late Emperor Francis Joseph in 1909. A similar distinction was conferred on him also by the provincial universities of Hungary.

BUENOS AIRES

(From Our Regular Correspondent)

April 14, 1928.

Excessive Tax

The Argentinian Supreme Court has found unconstitutional the excessive annual tax of 5,000 pesos imposed on those physicians who do not serve the state or who do not have a few hours of free consultation. This tax was established by the government of the province of San Juan, the present and former governors of which were physicians. These two governors during previous years had some difficulties with the local medical syndicate.

National Health Department

The president of the National Health Department, Dr. G. Araoz Alfaro, has resigned his post because parliament failed to authorize the necessary funds to ratify the laws to take care of and extend the sanitary services of the nation. His resignation has been accepted, and Dr. Tiburcio Padilla, Jr., has been provisionally designated president, and Dr. M. Bataglia, secretary.

Plague

Recently, the public was greatly alarmed by the death of a patient from postoperative pneumonia in the Fernandez Hospital, which was said by the attending physician to be due to pneumonic plague. The hospital was closed and quarantined. However, the diagnosis has proved erroneous and the alarm groundless. Nevertheless, the alarm was useful in that it led the health authorities to intensify and perfect the methods for killing rats in the city and port. There are some places in which infected rats are being constantly found. Rat eradication is difficult, because the immense dormitories and grain warehouses along the railroads in the interior were not built to be rat-proof. In ships, hydrocyanic acid or Clayton gas is used for the eradication of rats. In the port, dogs and traps are used; poisons are not employed to any great extent.

History of Medicine

The former dean of the Buenos Aires School of Medical Sciences published recently in Madrid a history of medicine in Rio de la Plata, in six volumes. The work has been highly praised.

Personals

Dr. Jose Moreno, professor of therapeutics of the Buenos Aires Medical School, is dead.——Dr. Leandro Valle, professor of operative medicine of the Buenos Aires Medical School, has been pensioned, having reached the required time of service.

ITALY

(From Our Regular Correspondent)

March 15, 1928.

Vital Statistics of Italy

According to the recently published bulletin of the Istituto centrale di statistica, there were 1,121,072 births in Italy in 1927. After deducting the stillbirths, the natural increase of population for the year was 444,000, as compared with 409,000 in 1926. The greatest number of births was recorded in Lombardy (307,926); the lowest number in Venetia Tridentina (16,852). The total number of marriages was 303,615, with the maximum in Lombardy (42,084) and the minimum in Venetia Tridentina (3,820). The total number of deaths in the kingdom was 631,987, as against 680,074 in 1926. The maximum recorded was in Lombardy (85,339); the minimum was in Umbria (10,034).

Exhibits of School Hygiene

Genoa has been conducting a series of exhibits in school hygiene, one of which was carried out by the pupils of the elementary classes, a second by the teachers of the rural schools, and the third by the teachers of all the schools of the province. In the first exhibit, sixty-eight schools with 323 pupils took part. Each class developed some particular phase of personal, familial or school hygiene. The purpose of the second exhibit was to stimulate the endeavors of the rural teachers in the promotion of hygienic principles, and was presented by five teachers who developed before each class some theme pertaining to hygiene. The third competitive exhibit left to those taking part the choice of any form of composition (story, dialogue, and the like) on the subject of hygiene, suitable for children of the elementary classes.

Medicolegal Studies on Social Insurance

The Cassa nazionale infortuni, in order to promote studies on insurance against industrial accidents and on social insurance in general, is offering prizes amounting to 60,000 liras for the best articles on the following medicolegal topics: (1) the conception and the limits of the so-called industrial risk; (2) the treatment and the indemnification of industrial injuries; (3) the determination of the injury and the estimation of compensation in insurance against industrial accidents, and (4) contract insurance and direct insurance against industrial accidents.

Statistics on Surgical Operations in Military Hospitals

The minister of war (the general management of the military sanitary service) has published the statistics pertaining to the surgical operations performed in the military sanitary institutions during the year 1926. The total number of operations was 5,646, resulting in 5,615 recoveries and thirty-one deaths. There were 108 operations performed on the cranium, eight of which were on the cranial dome, ninety-nine on the mastoid, and one on the lateral sinus. The operations on the face concerned in 241 cases ophthalmologic and in 355 cases otorhinolaryngologic cases. There were twenty-seven interventions on the neck and seventy-one on the thorax, the latter consisting almost exclusively of rib resections. There were 798 operations for the radical treatment of hernia, performed, for the most part, in accordance with the ordinary Bassini method, but, in a few instances, according to the modifications of Prstempski and Mugnai. There were 299 laparotomies, 181 of which were for appendicitis. There were, in addition, seventeen interventions on the stomach, fifteen of which were posterior transmesocolic gastro-enterostomies, performed by the von Hacker method. There were many interventions on the rectum and the anus, 305 of which were for the radical treatment of hemorrhoids. There were six operations on the kidneys. Of the numerous operations on the genitalia, the most frequent was for the treatment of varicocele (607 cases). Of the 110 interventions on the limbs, twenty were osteosyntheses.

The Death of Professor Di Cristina

Professor Giovanni Di Cristina, director of the Clinica Pediatrica in Palermo, has died. Di Cristina was graduated in 1902. His scientific interests centered more particularly around the study of the pathology of kala-azar, vaccinotherapy (in which field he devoted himself more particularly to antityphoid vaccines) and observations on treatment of leishmaniasis. But the studies most dear to him and to which he applied himself for many years were on the specific causative agent of scarlet fever, which studies he brought to a successful termination. He founded at Palermo the Ajuto Materno (mothers' aid society) and the Casa del sole, a society for the prevention of tuberculosis. He likewise enlarged and completed the Children's Hospital in Palermo.

A Bread Distribution

The week before Easter, there will be organized in all Italy the sale of sample loaves of a type of bread prepared expressly for the occasion by the Istituto Dietetico Rinaldo Rossi. The distribution is for the double purpose of introducing bread prepared in accordance with modern hygienic methods, and, at the same time, of securing funds with which the Opera Italiana "Pro Oriente" is planning to establish in eastern countries institutes and schools of agriculture.

The Antituberculosis Crusade in the Province of Milan

According to recent statistics, the antituberculosis society of the province of Milan controls at present nineteen dispensaries (as compared with ten in 1921), in which 12,504 patients were treated during the year. The society has the disposition of 350 beds for open tuberculosis, these being located, subject to its order, in various hospitals and sanatoriums in various parts of the province. During last year, the society provided 155,000 days of hospital treatment. The society is now erecting a large sanatorium of its own, near Cannobio. The members of the society numbered in 1920 only thirty, but in 1924 the membership had increased to 312. At present, it has been made obligatory for all communes of the province to take part in the work of the society.

BERLIN

(From Our Regular Correspondent)

April 28, 1928.

Berlin's Vital Statistics for 1927

A preliminary report of the Berlin Bureau of Statistics gives the vital statistics for the city of Berlin for 1927. The year shows a much worse record, as far as the deficit of births is concerned, than the previous year. The excess of deaths over living births, which, for the previous year, was slight, has now begun to take on considerable proportions. In 1927, only 42,696 children were born (living births), as against 45,273 in 1926 and 47,071 in 1925. That constitutes a birth rate of only 10.2 per thousand of population, in 1927, as compared with 11.0 and 11.7 per thousand for the years 1926 and 1925, respectively. The year 1927, therefore, shows a still further decline in the birth rate. For the purpose of comparison, it may be stated that, in 1913, the last complete year preceding the war, there were born, within the limits of present-day Berlin, the almost fabulous number of 76,665 children, or 19.3 per thousand. After the unexampled decline of the war and postwar years, the years 1919 and 1920 brought a rapid increase to 51,997 and 63,813, respectively, or 13.7 and 16.5, respectively, per thousand of population. But then, coincident with the distress growing out of the inflation of the medium of exchange, the years 1921, 1922 and 1923 brought an equally rapid decline of the births to 53,901, 45,686 and 38,924 (13.9, 11.6 and 9.9), and not until 1924 did an improvement set in, but that year brought an increase up to 41,546, or 10.5 per thousand of population.

Along with this rise and fall of the birth rate, there has been, of course, an irregular movement of the death rate, which is a reflection of many different influences. In 1927, the deaths, exclusive of stillbirths, amounted to 48,742, or 11.7 per thousand of population. As compared with 1926 with its 45,412 deaths, and its death rate of 11.1 per thousand of population, the year 1927 shows considerable increase in mortality. In the years immediately preceding, there had been, on the whole, a decline in the general mortality. After the terrible harvest of death during the war period, which was traceable in part to the fact that the bodies of the home population had been weakened by hunger, the years 1919 and 1920 produced 55,000 and 55,722 deaths, respectively (rates of 14.5 and 14.2 per thousand of population), and then the years 1921, 1922, 1923, 1924 and 1925 recorded 47,012, 52,984, 49,832, 47,179 and 45,651 deaths, respectively (rates of 12.1, 13.5, 12.7, 12.0 and 11.3 per thousand of population). In 1926, the total number of deaths reached the lowest level, 45,412, or 11.1 per thousand of population. The increased total for 1927 (48,742, or 11.7 per thousand of population) gives, it should be noted, a better showing than was recorded in 1913 (a total of 49,930 deaths, or 12.6 per thousand of population).

In 1913, owing to the relatively high birth rate for that year, the excess of births over deaths was still 26,735, or 6.7 per thousand of population. The year 1927 gave an excess of deaths over births of 6,046, or 1.5 per thousand of population. In 1926, the excess of deaths over births was quite inconsiderable—only 139. Large excesses of the deaths over the births were, however, recorded in 1922, 1923 and 1924, or 7,298, 10,908 and 5,633, respectively, or 1.9, 2.8 and 1.5 per thousand of population. The record year was 1923, in which the births reached their lowest level and the number of deaths was, at the same time, high.

That Berlin's population, in spite of such deficits, continues to increase is explained by the incessant immigration. The year 1927 recorded an immigration of no less than 319,713 persons, over against which an emigration of 238,581 must be taken into account. The net gain from that source for 1927 was 81,132, which was considerably higher than the net gain for 1926 (48,503), though lower than the net gain for 1925 (104,905). To be considered, however, is the fact that these gains through an excess of immigration over emigration make the bad housing situation in the capital still more acute.

Psychotherapy

Before the Berliner medizinische Gesellschaft, two noteworthy addresses on the subject of psychotherapy were recently delivered.

Herzberg discussed the therapeutic factors in psychoanalytic treatment. The unquestionably good results of psychoanalytic treatment are based, in his opinion, not only on the fact that, through analysis, complexes of which the subject is unaware are brought clearly before the conscious mind, and, through elimination of the irritative displacement, one precondition for the harassing symptom complex is removed. The analysis is effective, namely, also in cases in which no subconscious complexes are present. Analysis becomes then for the patient a diverting and disciplining employment. The unrestricted unburdening of the mind concerning instinctive impulses relieves the patient of pathogenic affects, awakens the feeling of being understood by some other person, and stirs hopes of a cure. In addition, certain factors of suggestion are important, strengthened by the feeling of sympathy awakened between the patient and the physician, together with the influence exerted on the patient's sense of guilt and a possible inferiority complex. Furthermore, through the bringing before the conscious mind of subconscious instinctive impulses the patient is saved the expenditure of psychic energy involved in irritative displacements, his belief in his illness is eliminated, and he is calmed through his newly acquired insight into the psychogenic nature of the symptoms. Emotional stirrings of a moral nature

brought out by the knowledge of offensive or objectionable impulses or an insight into the significance of the symptoms induce a healing reaction in the mind of the patient. If the physician succeeds in bringing patients with phobias into the corresponding genuine fear situation, such a maneuver constitutes effective psychotherapy. The good after-effects of psychoanalysis can be explained as due to the favorable influence of regained psychic activity. A knowledge of the multiple nature of the therapeutic factors involved in psychoanalysis tends toward a conscious endeavor to develop those factors in their practical application and thus to lay the foundations for a broader and more effective psychotherapy.

The psychotherapeutist Prof. J. H. Schultz treated the subject of psychotherapy as applied to organic neuroses. The psychotherapy of an organic neurosis must be preceded by thorough enlightenment in regard to the clinical and the physiologic situation. That does not exclude or restrict in any way the psychotherapeutic treatment. In connection with the diagnosis, not only an explanation of organic processes and an analysis of organs in which changes have occurred must be forthcoming, but there must be also, as recently emphasized by H. Zondek, an analysis of complex processes in organs that remain intact. In connection with these conceptions and the views of Kraus concerning reaction systems in the organism, a simple schema for the observation of such reaction systems is recommended, which, taking the physical-chemical field of research, together with the ionocolloidal processes, as the point of departure, leads, by way of the chemical-biologic processes of metabolism and the endocrine system, and likewise of the autonomic nervous system, to the psychologic field associated with the central nervous organs. The facts established by experimental suggestion, during recent years, show conclusively that psychic conditions are not confined to the last mentioned group but that they may extend into the realm of ionocolloidal relationships (Marx: "Influence of Suggestion on the Water Balance," Heyer: "The Effect of Suggestion on the Gastric Secretion," Pavlov, and others). Wherever there is a special function, a special psychic condition is, in principle, possible, though the situation may be controlled, in part, by factors that lie, in principle, outside the psyche. Psychotherapy may, therefore, be indicated wherever there are variations of functioning and there is a classification under the "subtraction system" (constitutional therapy). The demand was made that, in so-called psychoneuroses, all psychotherapeutic activities should be preceded by a clinical examination by an internist. Illustrative examples were given of simple mnemic mechanisms; of disorders of the will or of the faculty of judging or deciding; of disturbances of the emotions, of faulty adjustments, and of defective development of the personality as a whole. This classification gives, at the same time, certain suggestions as to the special psychotherapeutic indications. A critical and scientific psychotherapy is possible only on a biologic basis, and is thus fundamentally different from psychic treatment by persons lacking medical training.

Marriages

RAYMOND DE VAN KIMBROUGH, University, Va., to Miss Janet Haldane Coleman of Williamsburg, May 5.

JOHN WILLIAM ROY NORTON, Laurinburg, N. C., to Miss Juanita Ferguson of Jackson, Miss., April 8.

HARRY S. MACKLER, New York, to Miss Charlotte Orens of Long Beach, N. Y., recently.

FRANCIS PEERY HAMMOND, Chicago, to Miss Marguerite Helen Conrad, May 26.

SAMUEL LOEWENBERG to Miss Zena J. Blanc, both of Philadelphia, May 19.

Deaths

George Snider Brown ✠ Conway, Ark.; Bellevue Hospital Medical College, New York, 1877; Medical Department of the University of the City of New York, 1877; member of the House of Delegates of the American Medical Association, 1921, 1922 and 1923; past president of the Arkansas Medical Society; for eight years member and for four years president of the Arkansas Board of Medical Examiners; formerly member of the board of trustees of the Arkansas Tuberculosis Sanatorium; aged 75; died, May 11, of pneumonia.

Farrand Baker Pierson, New Rochelle, N. Y.; Cornell University Medical College, New York, 1909; member of the Medical Society of the State of New York; formerly on the staffs of the Prospect Heights and Cumberland Street and Brooklyn Maternity hospitals, Brooklyn; aged 51; died, May 9, of polycythemia.

Roy Jennings Crary, Iowa City; State University of Iowa College of Medicine, Iowa City, 1923; member of the Iowa State Medical Society; assistant in genito-urinary surgery at his alma mater; aged 32; formerly on the staff of the University Hospital, where he died, May 3, of pneumonia.

John Owen McGregor, Waterdown, Ont., Canada; University of Michigan Medical School, Ann Arbor, 1873; University of Toronto Faculty of Medicine, Toronto, Ont., Canada, 1875; aged 78; died recently in Hamilton, at the result of injuries received in an automobile accident.

John William Kail, Chicago; Bennett Medical College, Chicago, 1913; member of the Illinois State Medical Society; served during the World War; on the staff of the American Hospital; aged 53; died, May 13, at his home in Highland Park, Ill., of septicemia.

Edwin Wilson Goodman ✠ Oakland, Calif.; New York Homeopathic Medical College and Flower Hospital, New York, 1914; served during the World War; aged 35; died, April 16, at the U. S. Veterans' Hospital, Livermore, of chronic pulmonary tuberculosis.

Thomas Jay Carter ✠ Wichita, Kan.; Medical College of Indiana, Indianapolis, 1902; president of the board of trustees of Friend University; aged 51; died, May 7, in St. Louis, of bronchopneumonia, following lung abscess due to swallowing a bone in food.

Herman Alexander White ✠ Clinton, Iowa; Rush Medical College, Chicago, 1900; on the staff of St. Joseph's Mercy Hospital; aged 51; died, May 12, at Augustana Hospital, Chicago, following an operation for septic splenitis and cirrhosis of the liver.

Alfred Heineberg ✠ Philadelphia; Jefferson Medical College of Philadelphia, 1902; assistant professor of gynecology at his alma mater; formerly on the staffs of the Philadelphia and St. Agnes hospitals; aged 50; died, May 13, of cerebral hemorrhage.

Charles Marion Hamilton, Thornburg, Iowa; College of Physicians and Surgeons, Keokuk, 1881; for many years member of the Thornburg and Keokuk County boards of education; aged 70; died, April 23, of complications following erysipelas.

Martin Ezekiel Herrmann ✠ Dushore, Pa.; Bellevue Hospital Medical College, New York, 1883; president of the Sullivan County Medical Society; formerly member of the state legislature; aged 85; died, April 2, of uremia and heart disease.

Burris Earle Burchfield, Ruleville, Miss.; Tulane University of Louisiana School of Medicine, New Orleans, 1914; member of the Mississippi State Medical Association; aged 39; died, April 19, at the King's Daughters Hospital, Greenville.

S. Ellis Crane ✠ Syracuse, N. Y.; Syracuse University College of Medicine, 1892; on the staff of the Crouse-Irving Hospital; for twelve years Onondago County coroner; aged 59; died, May 4, of cerebral hemorrhage and arteriosclerosis.

William M. Murry, Ripley, Miss.; Medical Department of the Tulane University of Louisiana, New Orleans, 1875; member of the Mississippi State Medical Association; health officer of Tippah County; aged 76; died, April 16, of influenza.

William Hammond Cross Smith ✠ Godfrey, Ill.; Long Island College Hospital, Brooklyn, 1889; superintendent of the Beverly Farm, Inc.; past president of the American Association for Study of Feebleminded; aged 68; died, April 26.

William P. McKee, Eustis, Fla.; University of Louisville (Ky.) School of Medicine, 1872; member of the Florida Medical Association; formerly secretary of the Lake County Medical Society; aged 80; died, April 21, of hemiplegia.

William R. Goodykoontz, Desloge, Mo.; Missouri Medical College, St. Louis, 1866; member of the Missouri State Medical Association; formerly member of the state legislature; aged 80; died suddenly, May 7, of heart disease.

Keith Wilson Cameron, San Antonio, Texas; University of Toronto Faculty of Medicine, Toronto, Ont., Canada, 1914; on the staff of the Robert B. Green Memorial Hospital; aged 36; died, March 11, of bronchopneumonia.

Benjamin Hicks Cheney, New Haven, Conn.; Medical Department University of Louisiana, New Orleans, 1861; Civil War veteran; member of the city board of health for many years; aged 89; died, May 7, of pneumonia.

Frank Remington Loomis, Detroit; University of Michigan Homeopathic Medical School, Ann Arbor, 1914; member of the Michigan State Medical Society; aged 36; died, May 19, from the effects of inhaling illuminating gas.

Frank B. Wheeler ✠ Hudson, N. Y.; Albany Medical College, 1904; past president of the Columbia County Medical Society; formerly on the staff of the Hudson City Hospital; aged 47; died, April 28, of angina pectoris.

Ezra Warren Clark, Brockton, Mass.; Jefferson Medical College of Philadelphia, 1870; member of the Massachusetts Medical Society; formerly member of the state legislature; aged 85; died, May 1, of pneumonia.

James Eldridge Watson, Pekin, Ill.; Bennett Medical College, Chicago, 1911; formerly health officer of Pekin; on the staff of the Pekin Public Hospital; aged 60; died, May 12, as the result of a cerebral hemorrhage.

Joseph Delphis Salvail, Toledo, Ohio; University of Montreal Faculty of Medicine, Montreal, Que., Canada, 1894; member of the Ohio State Medical Association; aged 60; died suddenly, May 15, of heart disease.

Edwin Francis Cummings, Revere, Mass.; Harvard University Medical School, Boston, 1877; member of the Massachusetts Medical Society; aged 77; died, May 5, of carcinoma of the prostate and arteriosclerosis.

Lewis S. Somers ✠ Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1892; formerly on the staff of the Stetson Hospital; aged 57; died, May 13, of myocarditis and chronic nephritis.

Franklin G. Weary, St. Joseph, Mo.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1883; member of the Missouri State Medical Association; aged 66; died suddenly, May 2, of cerebral hemorrhage.

Louis Schaefer ✠ Brooklyn; Cornell University Medical College, New York, 1902; on the staffs of St. Catherine's Hospital and St. Cecilia Maternity Hospital; aged 50; died, May 14, of chronic nephritis and uremia.

James Thomas Mitchell ✠ Middletown, Conn.; Medical Department of the University of the City of New York, 1891; on the staff of the Middlesex Hospital; aged 59; died, May 2, of a self-inflicted bullet wound.

Arthur Osborn, Elmira Heights, N. Y.; University of Michigan Medical School, Ann Arbor, 1882; formerly on the staff of the Charles B. Towns Hospital, New York; aged 66; died, May 1, of heart disease.

Robert McMath Sands, Pittsburgh; University of Maryland School of Medicine, Baltimore, 1883; member of the Medical Society of the State of Pennsylvania; aged 71; died, May 10, of lobar pneumonia.

Oliver Rugh Haymaker ✠ Roswell, N. M.; Jefferson Medical College of Philadelphia, 1890; past president of the Chaves County Medical Society; on the staff of St. Mary's Hospital; aged 63; died, February 27.

Lawrence Patrick Fox, Weston, Mo.; Medical College of Virginia, Richmond, 1918; member of the Oklahoma State Medical Association; aged 36; died, May 7, in a hospital at St. Joseph, of pneumonia.

Joseph Benjamin Kopf, Brooklyn; Medical Department of the University of the City of New York, 1895; member of the Medical Society of the State of New York; aged 54; died, May 9, of pneumonia.

Gilbert Dodds Drennan, Woodhull, Ill.; Northwestern University School of Medicine, Chicago, 1902; member of the Illinois State Medical Society; aged 52; died, May 5, of coronary thrombosis.

William Albert Wright ✠ Pocatello, Idaho; Rush Medical College, Chicago, 1901; on the staffs of the Pocatello General Hospital and St. Anthony's Mercy Hospital; aged 50; died suddenly, April 6.

Apollos Fletcher Phillips, Fort Wayne, Ind.; Trinity College, Toronto, Ont., Canada, 1895; member of the Indiana State Medical Society; aged 62; died, May 3, of acute dilatation of the heart.

Rufus Crawford, Saugerties, N. Y.; Bellevue Hospital Medical College, New York, 1876; member of the Medical Society of the State of New York; aged 79; died, April 26, of arteriosclerosis.

Hermann Gustav Klotz, New York; University of Leipzig, Germany, 1868; member of the Medical Society of the State of New York; aged 83; died, May 6, in the New York Hospital, of pneumonia.

John W. Young, Clinton, S. C.; Medical College of Georgia, Augusta, 1871; member of the South Carolina Medical Association; Confederate veteran; aged 84; died, May 2, of cerebral hemorrhage.

Ferdinand Charles Wolff ✠ Hoboken, N. J.; Medical Department of Columbia College, New York, 1895; aged 54; on the staff of St. Mary's Hospital, where he died, May 1, of septicemia.

Arnold Abraham D'Ancona, San Francisco; University of California Medical School, San Francisco, 1884; aged 68; died, May 7, at the Lane Hospital, of coronary thrombosis and myocarditis.

Harry Shindle Wingert ✠ Columbus, Ohio; Maryland Medical College, Baltimore, 1903; director of the student health service, Ohio State University; aged 62; died, May 11, of nephritis.

George Newton Jeffers, Elgin, Kan.; Northwestern University Medical School, Chicago, 1903; aged 47; died, January 30, at the Municipal Hospital, Pawhuska, Okla., of nephritis.

George Franklin Savage, Port Washington, Wis.; Milwaukee Medical College, 1903; member of the State Medical Society of Wisconsin; aged 51; died suddenly, May 6, of heart disease.

William A. Allen, Flushing, N. Y.; New York Homeopathic Medical College, 1870; aged 80; formerly on the staff of the Flushing Hospital, where he died, May 3, of heart disease.

Albert Henry Farnsworth ✠ Grand Island, Neb.; Chicago Homeopathic Medical College, 1900; on the staffs of the Grand Island General and St. Francis hospitals; aged 52; died, April 19.

Campbell H. Johnson ✠ Paducah, Ky.; Kentucky School of Medicine, Louisville, 1891; on the staff of the Illinois Central Hospital; aged 57; died suddenly, May 4, of heart disease.

Uriah H. Malick, Bloomington, Neb.; College of Physicians and Surgeons, Keokuk, 1878; member of the Nebraska State Medical Association; aged 76; died suddenly, April 10.

Sylvan Gabriel Cohen, Chicago; University of Illinois College of Medicine, Chicago, 1903; aged 52; died, May 6, at the American Hospital, of lymphosarcoma of the mediastinum.

Jonas E. Reinthaler ✠ New York; University of Munich, Germany, 1892; for twenty-five years on the staff of the Beth Israel Hospital; aged 59; died, May 5, of coronary thrombosis.

George Arthur Mathews, Wray, Colo.; Medical College of Ohio, Cincinnati, 1889; aged 64; died, April 22, at St. Luke's Hospital, Denver, of injuries received in an automobile accident.

William Talmadge Hughes ✠ Oak Park, Ill.; Rush Medical College, Chicago, 1909; aged 51; for two years on the staff of the West Suburban Hospital, where he died, May 17.

William Harry Neville, Auburn, N. Y.; Syracuse University College of Medicine, 1903; veteran of the Spanish-American and World wars; aged 52; died, April 13, at St. Petersburg, Fla.

George Hugh Miller, Montreal, Que., Canada; University of Vermont College of Medicine, Burlington, 1886; died, March 22, at the Montreal General Hospital, of septicemia.

Harry G. Rand, Chicago; Chicago Medical School, 1922; aged 34; died, May 7, of subdural hemorrhage as a result of being bounced against the top while riding in an automobile.

William Crosgrove Willing, Chicago; Hahnemann Medical College and Hospital, Chicago, 1892; aged 57; was found dead in bed, May 3, of myocarditis and arteriosclerosis.

William Forest Sharpnack, Oil City, Pa.; Jefferson Medical College of Philadelphia, 1902; on the staff of the Oil City Hospital; aged 52; died, May 9, in a hospital at Mercer.

John Aloysius Carroll, Boston; Harvard University Medical School, Boston, 1886; member of the Massachusetts Medical Society; aged 70; died, May 6, of coronary thrombosis.

H. Philip Hill, San Antonio, Texas; Maryland Medical College, Baltimore, 1907; member of the State Medical Association of Texas; aged 46; died suddenly, May 8.

Thomas Joseph Ward, Rochester, N. Y.; Medical Department of the University of the City of New York, 1892; aged 58; died, May 4, of cerebral hemorrhage.

Harry Charles Thon, Woodstock, Ill. (licensed, Illinois, 1899); formerly on the staff of the Woodstock Hospital; aged 50; died, April 10, of heart disease.

William Edward Wiegand ✠ Baltimore; University of Maryland School of Medicine, Baltimore, 1876; aged 75; died suddenly, May 13, of angina pectoris.

Paul M. Raysor, Bryan, Texas; Medical Department of the Tulane University of Louisiana, New Orleans, 1884; aged 64; died, May 5, of cerebral hemorrhage.

James H. Foster, Fort Smith, Ark.; Memphis (Tenn.) Hospital Medical College, 1889; aged 69; died, May 1, in St. John's Hospital, of pneumonia.

Malcolm J. Nicholson, Seattle; Medical Department of the University of the City of New York, 1888; aged 70; died, April 25, of cerebral hemorrhage.

Pearl D. Winship, Park Rapids, Minn.; College of Physicians and Surgeons, Keokuk, Iowa, 1878; Civil War veteran; aged 87; died in February.

James P. Battle, Nashville, N. C.; University of Maryland School of Medicine, Baltimore, 1889; aged 60; died, April 16, as the result of paralysis.

Albert Wilgus, Washington, D. C.; Rush Medical College, Chicago, 1870; also a minister; aged 82; died, April 27, at Brooklyn, of myocarditis.

George Thorndike Chase ✠ New York Harvard University Medical School, Boston, 1885; aged 70; died, April 28, of chronic myocarditis.

John A. Lane, Syracuse, N. Y.; McGill University Faculty of Medicine, Montreal, Que., Canada, 1877; aged 76; died, May 9, of pneumonia.

Thomas Irvin Burbage, Como, N. C.; Memphis (Tenn.) Hospital Medical College, 1883; aged 65; died, April 15, of cerebral hemorrhage.

Wilson Thompson Banker, Columbus, Ind.; Medical College of Indiana, Indianapolis, 1879; aged 80; died, May 9, of cardiorenal disease.

Daniel Bartholomew Hurley ✠ Boston; Harvard University Medical School, Boston, 1887; aged 62; died, May 5, of cardiac asthma.

Stuyvesant Fish Morris, New York; Medical Department of Columbia College, New York, 1867; aged 84; died, May 11, of pneumonia.

John Fleming Irvine ✠ Tollesboro, Ky.; Kentucky School of Medicine, Louisville, 1880; aged 74; died, May 2, of pneumonia.

John A. Clark, Bedford, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1871; aged 80; died, May 7, of uremia.

Michael Mallett Stevens, Woburn, Mass.; Boston University School of Medicine, 1900; aged 55; died, May 2, at West Rutland.

Morris Klein ✠ New York; Long Island College Hospital, Brooklyn, 1915; aged 40; died in April, of valvular heart disease.

James B. Miller, Marion, Ill. (licensed, Illinois, 1895); aged 71; died, May 6, at the Herrin (Ill.) Hospital, of pneumonia.

Henry A. Turner, Rome, Ga.; University of Georgia Medical Department, 1894; aged 54; died, May 4, of heart disease.

Irving E. Mabry, North Fryeburg, Maine; Medical School of Maine, Portland, 1880; aged 77; died, May 3, of senility.

John Woodman ✠ New York; Medical Department of Columbia College, New York, 1883; aged 69; died, May 14.

John Hamilton Hoover, Haddam, Kan.; St. Joseph Medical College, St. Joseph, Mo., 1886; aged 74; died, April 3.

Louis Dunn ✠ Minneapolis; Medical College of Ohio, Cincinnati, 1887; aged 61; died, April 20, of heart disease.

Allen H. King, Coin, Iowa (licensed, Iowa, 1887); aged 77; died, March 23, as the result of a cerebral hemorrhage.

John M. Robinson, Liberty, Mo.; St. Louis Medical College, 1869; aged 81; died, April 27, of prostatitis.

Correspondence

"THE CUNNINGHAM TANK TREATMENT"

To the Editor:—With reference to the report on the Cunningham "Tank Treatment" (THE JOURNAL, May 5, p. 1494), two additional points should be made for the sake of completeness.

1. The treatment is not new. Similar installations have been in use over a period of some years in some of the German watering places, and the method is still in use, on a moderately large scale, at Bad Reichenhall. It should be observed, however, that such claims as are now made for the treatment at Bad Reichenhall are limited to the effect of increased atmospheric pressure in bronchial asthma, that no claim is made that the method influences the oxygen supply to the tissues, and that even in bronchial asthma the claims made for the efficacy of the treatment are only poorly supported by any clinical or scientific evidence. In addition to the installation at Bad Reichenhall there is an installation of a similar nature in the new and palatial Schwabinger Krankenhaus in Munich, but I am informed that it has had little or no use, on account of the fact that the medical staff of the hospital has little faith in the method, even in the treatment of bronchial asthma.

2. To any one familiar with the work of the past few years on the oxygen-carrying function of the blood, the claim that the method has any effect on oxygen supply or oxygen tension in the tissues is absurd. Increase of the partial pressure of oxygen in the lungs, either by the administration of oxygen or by increasing the atmospheric pressure, will not influence the oxygen content of the blood appreciably except when ordinary oxygen tensions fail to saturate completely the hemoglobin of the blood, as may occur in heart failure and in pneumonia. To claim that oxygen may be made to reach the tissues at higher tensions is only to display ignorance of the mechanism by which oxygen is transported to and given off to the tissues.

FRANKLIN C. MCLEAN, M.D., Chicago.
Professor and Chairman of the Department of Medicine, University of Chicago.

"INSULIN EDEMA"

To the Editor:—In reply to the communication of Dr. Geyelin (THE JOURNAL, April 7, p. 1142), I wish to state that in a personal communication Dr. Elliott P. Joslin of Boston writes me that he agrees with my interpretation of the case of "insulin edema" reported by me in THE JOURNAL (February 25, p. 610), and he also informs me that he cited my case in his new fourth edition of the Treatment of Diabetes Mellitus, page 658, which will appear in June, 1928.

AARON LEIFER, M.D., Brooklyn.

BENJAMIN WATERHOUSE

To the Editor:—In THE JOURNAL, May 12, page 1574, I notice your reference to Benjamin Waterhouse, the first "professor of physic" at Harvard, who performed on his son the first antismallpox vaccination in the United States. Benjamin Waterhouse was also professor of natural history at Brown University from 1784 to 1791.

W. W. KEEN, M.D., Philadelphia.

Harvey and Darwin.—There is a very remarkable parallel between the discoveries of Harvey and of Darwin—although the two men represent very different physical types of Englishmen. Both put forward a hypothesis to explain an enormous number of biological facts—the one to prove the truth of the circulation, the other to prove the truth of evolution.—Sir Arthur Keith, *Lancet*, May 19, 1928.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

TREATMENT OF THE NERVOUS HOUSEWIFE

To the Editor:—I have become interested in the frequently met situation wherein apparently healthy and able-bodied women show strange delicacy, gloominess and worry often and on the slightest causes. They may be intelligent and industrious and not apparently high-strung, but nevertheless so much subject to frequent "blues" and worries as to make most of their spare time unhappy or futile. Besides obvious "mental" causes, such as indecision, lack of purpose and self-interest, there must be more "physical" reasons in some cases at least. I should like to have references to tested, brief and practical procedures for locating the causes and remedying the situation, if any procedure short of costly examinations and long training programs has ever been developed. People who are fully grown, poor in purse, steeped in their jobs and "in the rut" generally cannot and will not go to much trouble or expense to correct their trouble—in fact, they often do not realize it. With a really practical plan, however, I should think many of these women could be encouraged to do enough (slowly, if necessary) to bring them at least a realization of their condition, with some chance to better it. What would you recommend?

STUART C. STIMSON, Terre Haute, Ind.

ANSWER.—The condition outlined constitutes one of the most complex and yet most frequent problems that confront the physician in general as well as special practice. There is no simple or royal road to its solution and there is no prescription that will meet the condition. The only answer is a careful study not only of the patient but also of the conditions under which she is living. Only too often the symptoms are ascribed to some more or less trivial physical abnormality—a uterine displacement, a movable kidney or an increased basal metabolic rate. Once convince the patient that she is suffering from such physical disability and she will demand that this be remedied and will resist any effort to modify habits of thought and behavior which are most often the real underlying factors. This does not mean, however, that physical handicaps should not be remedied if they are real; small irritations may cause much suffering when more important though also more obscure difficulties set the stage for heightened irritability. The real causes most often lie in faulty adjustments of the patient to the facts of life; discovery of their actual nature—they are strictly individual and generalizations are not possible—means the expenditure of much time in a study of the facts of the patient's life, her feelings, ambitions, restrictions, facilities for recreation, interests and opportunities. When these are known, much can often be accomplished by better planned methods of living, by bringing about better understanding and cooperation of the husband or other members of the family, without the expenditure of much money. Patience, perseverance and real understanding of the patient and her problems are needed. This whole field of mental hygiene is greatly in need of recognition by the physician; it is not possible to practice it by rule of thumb and it requires considerably more time and patience than the mere prescription of drugs or other specific remedies or the performance of an operation. In regard to the specific type of difficulty discussed by our correspondent it may be advised that the book The Nervous Housewife, by Abraham Myerson, Boston, Little, Brown & Co., 1920, be consulted.

EQUIPMENT FOR PHYSICIAN SPECIALIZING IN NEUROLOGY

To the Editor:—Since my graduation in 1911, I have worked in institutions that care for patients with nervous and mental diseases. I feel that I have a working knowledge of these diseases. Conditions are now such that I think that I must soon go into private practice. I do not know just how those who limit their practice to nervous and mental diseases equip their offices. I know one should be equipped for making urine examinations, blood counts and blood pressure, the same as any office, but what I wish to know is whether there is any special equipment that is usually found in such offices that is of real value, especially from the standpoint of treatment of nervous and functional conditions. If so, please tell me the name and where it can be obtained. Kindly omit my name.

M.D., Wisconsin.

ANSWER.—The equipment needed, in addition to that mentioned, will depend to some extent on the facilities for consultation in the study of special organs, particularly of the eyes and ears. An ophthalmoscope is essential and if an ophthalmologist is not available it will be necessary to perform perimetric studies and tests of acuity of vision. A laryngoscope is also needed. For the ears there will be needed the means for testing acuity of hearing—tuning forks—and when consultation is not possible the means for performing caloric and rotation tests of vestibular function. Test solutions for examination of the senses of smell and taste are also required. In addition to the usual percussion hammer for examining the reflexes and a compass point esthesiometer for testing the skin sensibility, a dynamometer for measuring the grip is often useful and there will be needed a large tuning fork for testing vibratory sensibility and also galvanic and faradic currents for the examination of the electrical reactions of muscles. Estimations of the basal metabolic rate are often required, but can probably be performed by a laboratory or hospital; lumbar puncture is not an office procedure as a rule, but should be performed in a hospital; the necessary apparatus, however, will be needed. All this apparatus can be secured from any instrument supply house and there are many individual preferences for particular forms.

SODIUM IODIDE FOR PREVENTION OF GOITER

To the Editor:—Please advise whether there is any objection to the use of sodium or potassium iodide (from 7½ grains to 1 drachm, 7½ grains to each ounce of distilled water), and giving one drop of this solution and in this proportion daily to two children, aged 9 and 11, in a family which seems to be rather prone to goiter. The children have not evidenced any symptoms as yet. Kindly omit name.

M.D., North Carolina.

ANSWER.—Brain (Heredity in Simple Goiter, *Quart. J. Med.* **26**:303 [April] 1927) has recently emphasized the factor of heredity in iodine metabolism and its effect on the incidence of simple goiter. He reported a series of six families with a high incidence of goiter, through a number of generations, out of proportion to that of the surrounding population living in the same environment. This tendency is more frequent in females than in males. It has been experimentally and therapeutically shown that involution of the glands occurs when iodine is supplied, and this is the basis for the prevention and treatment of simple goiter (see work of Marine). At the present time iodine containing compounds are widely used in goiter prophylaxis. The solution mentioned would provide about 7 mg. weekly, which should be sufficient for prophylactic use.

DIAGNOSIS OF CENTRAL OR PERIPHERAL PALSY

To the Editor:—A man, aged 50, sustained an injury, particularly to his right arm, having been dumped from a hoist. He hung on to the hoist by one arm for about five minutes and was greatly excited at the time. The injury he received at the time, torn ligaments, healed in a few days. But three days after the accident Bell's palsy developed on the opposite side of the injury and seems to be permanent. There is no element of exposure to be considered, as the accident occurred in October. Up to the present time I have not heard of a similar case. I cannot but feel that the palsy was due to the injury, although I am at a loss for an explanation, as there is no history of trauma of the nerve itself in its external course, and as a physical examination, including urine and blood, was negative. I would greatly appreciate your opinion and any references you might give in this matter, and would like to know how you determine whether or not a palsy is due to an intercranial lesion or is external. Please omit name.

M.D., Indiana.

ANSWER.—The first point to be determined is whether the palsy is due to involvement of the peripheral nerve (Bell's palsy) or whether it is of central origin. In the former, all muscles supplied by the nerve are usually affected equally, the forehead and orbicularis palpebrarum as much as the muscles about the mouth; the muscles will also show a reaction of degeneration when examined electrically—loss of excitability to faradism, with possibly retention or even increased excitability to galvanism and polar changes. A central facial palsy usually involves the upper part of the face little, if at all, and is much more marked about the mouth; here, too, there are no electrical changes. The common site of a lesion involving the facial nerve is in the fallopian aqueduct—hence an examination of the ear is indicated; exposure to cold is not necessary, many of these peripheral palsies being apparently due to infection like other forms of peripheral neuritis; traumatic injury to the facial nerve is most likely due to a fracture involving the petrous portion of the temporal bone unless there has been a direct injury to the nerve after it leaves the skull. A skull fracture would cause other symptoms, such as unconsciousness and bleeding from the ear, and the injury would most probably be present immediately after the accident; a more peripheral injury would show evidences of bruising and pain externally. The nerve could hardly be injured inside the skull without other evidence of injury to adjacent structures.

A central palsy, also, would almost certainly be accompanied by signs of injury to the pyramidal fibers for the arm and possibly the leg, and by symptoms of concussion. The account given suggests that the palsy is a chance association and not the result of the accident, especially as it did not appear for three days.

USE OF KAOLIN PACKS IN VAGINITIS

To the Editor:—A patient of mine recently was examined at a well known clinic with a diagnosis of (1) vaginitis; (2) constipation; (3) chronic fatigue. The treatment recommended was that the patient be placed on a normal diet and have vaginal treatments consisting of kaolin packs, mercurochrome-220 soluble, suppositories and douches. I should like to know the technic as to the kaolin packs—what form, how often and how long the treatment should be used before results can be expected. Please omit name.

M.D., Michigan.

ANSWER.—Kaolin is used as a powder by insufflation with a powder blower into the vagina, the folds of which have been separated by means of a vaginal speculum. In Europe, where this treatment is much more popular than in this country, there are on the market vaginal powder insufflators (e. g., Liepmann's) for use by the patient herself once or twice daily. Instead of insufflation, large sized gelatin capsules with powder might be introduced into the vagina and kept in place by a cotton tampon. In all powder treatments of this kind the patient uses a douche at least once or twice a week. The treatments may have to be carried on for weeks or months.

POSSIBLE DIAGNOSIS OF NEUROLOGIC SYMPTOMS

To the Editor:—Will you be good enough to make any suggestions as to the possible diagnosis in the following case: An American fisherman, aged 34, whose marital relations have not resulted in any pregnancies, who has with the exception of severe pneumonia in 1918 always been generally well, is of medium build, unusually well developed and nourished, and the physical examination, including blood Wassermann reaction, is entirely negative. There is no asymmetry of development. The only complaint is that for the past two years, beginning insidiously, there has been a slowly increasing weakness of both hand grasps. For the last six months there has been no appreciable increase, but during that period he has been unable to lift more than a moderate weight. Measurements show the right hand slightly stronger than the left. All other parts of the body are of normal strength. He states that he is capable of carrying 175 pounds on his back, but can lift with his hands no more than 20 pounds, and is likely to drop even that. Roentgen-ray examination is entirely negative. Blood examination other than Wassermann shows all elements within normal limits. There is no evidence of poisoning with heavy metals, and I am unable to identify any etiologic factor.

R. H. GILPATRICK, M.D., Boston.

ANSWER.—No diagnosis is justified from the facts given. The following points should be investigated: the presence or absence of atrophy of muscles in the forearms and hands and its distribution; the occurrence of fibrillary twitchings in the muscles; changes in the electrical reactions of the muscles; evidences of disturbed function in the pyramidal tracts in the form of exaggerated deep reflexes in the lower extremities and the presence of a Babinski sign or other modification of the plantar reflex; the condition of the wrist and elbow jerks. It is also especially important to know whether there are disturbances in the skin sensibility, which may involve pain and temperature sensibility without affecting tactile sensation; if present, the distribution is also important. From the account given it appears that there has been no pain or paresthesia, no disorder in coordination, no affection of gait and no sphincter disturbance.

The conditions most suggested by the slowly progressive loss of power are progressive muscular atrophy, amyotrophic lateral sclerosis or possibly syringomyelia. The two former are diseases that involve only the motor neurons; in both there is progressive degeneration of the motor cells in the anterior horns of the cord; the chief signs are muscular atrophy, with fibrillary twitching and more or less complete electrical reaction of degeneration; the difference between the two is that the pyramidal tract neurons are involved in amyotrophic lateral sclerosis and not in progressive muscular atrophy; the former usually progresses more rapidly than the latter. In syringomyelia, the lesion is a new growth in the neighborhood of the central canal of the cord with formation of cystic cavities; sensory symptoms are prominent, but may be discovered only when specifically sought; pain is frequently present in the earlier stages and the sensory loss is usually of pain and temperature sensibility rather than of touch; atrophy of muscles results from injury to the anterior horn cells and there are usually signs of pyramidal tract injury to be found in the lower extremities. All of these conditions tend to involve the lower part of the cervical enlargement of the cord first, so that the earliest symptoms are often limited to the small muscles of the hand and to the forearms.

THERAPEUTIC VALUE OF STILLINGIA SYRUP

To the Editor:—Please advise me as to the therapeutic value of stillingia syrup. Is this a stillingia liniment compound? If so, what is its therapeutic value? I refer in particular to its action in so-called croups of infants. Please omit my name.

M.D., Wisconsin.

ANSWER.—Stillingia is capable of acting as a nauseant, emetic and laxative. Its nauseant action may conceivably make it of use in spasmodic croup of infants, though ipecac is much more reliably efficient in this condition. There are also much more reliable cathartics than stillingia. Because stillingia is only a third or fourth rate drug in these effects, it has been deleted from the United States Pharmacopeia.

A Compound Syrup of Stillingia is official in the National Formulary. This contains corydalis, blue flag, sambucus, chimaphila and prickly ash berries, besides stillingia. It is one of the examples of polypharmacy that could hardly be dignified even with the epithet of "shotgun mixture," for shot may hit a mark; and the other ingredients in this mixture are even less reliable and efficient than stillingia.

The "New Standard Formulary" by Hiss and Ebert (Chicago, G. P. Engelhard and Company, 1920) gives several formulas for "Liniment of Stillingia, Compound" employed by "eclectics" in the treatment of asthma and croup, one of which might be quoted as an example:

Oil of stillingia	30.0 cc.
Oil of cajeput	15.0 cc.
Oil of lobelia	8.0 cc.
Alcohol	60.0 cc.

Whatever efficiency it possesses resides partly in its rubefacient qualities contributed chiefly by the oil of cajeput, and the antispasmodic qualities of lobeline, some of which may possibly be absorbed from this preparation. Reliable information is not available as to whether any effects can be obtained from application of "stillingia oil" to the skin.

XANTHOMA OF THE EYELIDS

To the Editor:—My wife has on the upper eyelids, just beneath the skin, something that looks like a fatty substance and is very yellow but not sore. It shows plainly and is getting larger; that is, it is spreading. We have consulted several specialists, but they don't seem to know just what it is. It started just with a little speck. There seems to be one starting on the lower lid. It appears to be just under the skin and looks as if it could be peeled out if the skin was opened. Can you offer any advice as to what it is? Is an operation advisable?

M.D., Missouri.

ANSWER.—In all probability, this is a xanthoma of the eyelids. The appearance of such symmetrical xanthomatous patches is common during the latter phases of middle life, particularly in women. Anatomically, the patches are composed of round cells, filled with fat and arranged nestlike. The cells probably originate from connective tissue cells. After reaching a certain size, the tumors grow slowly and eventually come to a standstill. They never become malignant. The indications for treatment or operation are purely cosmetic. The earlier cases may be touched lightly with dilute acetic acid, forming an eschar which eventually sloughs and leaves a small superficial scar. Probably the better way is to remove the tumors surgically.

THORIUM X

To the Editor:—There is some German literature (1912 and 1913) on the use of thorium X in the anemias and also some in the *Medical Record* of March, 1913, by Francis E. Park on the same subject. All of this has been revised and incorporated in the fourth volume of the George Blumer edition of Billings and Forchheimer's Therapeusis of Internal Diseases. Can you tell me any more about the use of this remedy and also where or how it may be obtained, and the probable cost, if known?

HOMER R. SMITH, M.D., Minneapolis.

ANSWER.—Thorium X is chiefly employed by the Germans in lieu of radon, as they do not possess enough radium to produce the amount of emanation required, and thorium is considerably cheaper and capable of producing similar results.

The limited duration of the radioactivity of thorium X is a disadvantage which restricts its use to the necessity of procuring fresh preparations to be consumed within a few days.

We do not know of any firm marketing this product in this country.

DOSAGE OF THYROID SUBSTANCE

To the Editor:—I am interested in obtaining a table of approximate dosages of U. S. P. desiccated thyroid substance for each five degrees of minus metabolism in hypothyroidism, as —5, —10 and —15. Please omit name.

M.B., Minnesota.

ANSWER.—There is no way of determining the dosage of desiccated thyroid except by certain general rules. Naturally, the lower the metabolism, the larger the dosage tolerated, but apparently no two individuals react in exactly the same way. The safest procedure is to start with small doses and watch the patient carefully both clinically and with metabolism tests. For example, a patient with —15 per cent, of normal weight, can usually be given one-half grain (0.03 Gm.) twice a day for a period of one week without any harmful results. Even, however, under these conditions the dose may be too large and symptoms of thyroid poisoning develop, as would be evidenced by nervousness, increased pulse rate or changed metabolism.

TREATMENT FOR INFESTATION OF INTESTINE WITH ENDOLIMAX NANA

To the Editor:—Would you please give me the treatment for a parasite in the intestines known as *Endolimax nana*. I have given santonin and calomel, also carbon tetrachloride, but without much result.

C. C. BOHANNON, M.D., Daytona, Fla.

ANSWER.—*Endolimax nana*, also known as *Endameba nana*, is considered nonpathogenic by most authorities on the subject, though there are some who believe that it may be pathogenic. No information is available regarding any special treatment of infestation with this organism. It may, however, be reasonably assumed that the treatment employed against *Endameba histolytica* may also be useful against this parasite, biologically so similar.

GLYCOSURIA AND LACTATION

To the Editor:—I have a patient, aged 33, the mother of a baby 6 months of age. When the baby was 3 months old, the mother developed glycosuria. On a restricted diet she still shows a trace of sugar. Is there anything in lactation to cause this, and is it harmful to the mother or the baby to continue nursing? It is her first child. Please omit name.

M.D., Missouri.

ANSWER.—The first thing that has to be found out about this patient is whether the sugar is dextrose or lactose. Many lactating mothers show a reduction which is due to lactose in the urine. Any good clinical laboratory can determine the nature of the reducing body. If it turns out to be lactose, nothing should be done. If it is dextrose, it would be wise to determine the blood sugar. Occasionally the condition of renal glycosuria develops, in which case the blood sugar will be normal and no treatment is indicated.

If it is a true diabetes the blood sugar will be above normal and the patient should receive treatment corresponding to the degree of severity of the disease. However, if the baby is getting along there seems to be no indication for removing it from the breast.

TREATMENT OF COMPULSION NEUROSIS

To the Editor:—I am interested in a case of compulsion neurosis of several years' standing. Several reputable psychoanalysts have declared the case to be amenable to and curable by psychoanalysis. However, the time element (at least one year) and the fees involved are such as to constitute an utter impossibility to the patient. Whereas the school of psychoanalysis declares that a suppressed etiologic factor must be routed out and eradicated by reeducation, etc., the school of hypnosis proceeds on the assumption that the manifestation of the condition may be permanently removed by suppression; i. e., constructive suggestion. In view of the apparent variance of the two schools, would you have the kindness to advise me of the relative values of the two and whether each or both are permanent in their effects?

M.D.

ANSWER.—Freud, the father of the psychoanalytic school, originally used hypnotism to discover repressed complexes underlying the psychoneuroses; later he discarded this technic as unnecessary and inefficient. The only logical method of attacking faulty habits of thought and act is by analysis with the purpose of finding out the reason for the faulty habits, to be followed by reeducation. There are many different ways of going to work in accomplishing this end and it is not necessary to adopt the whole freudian theory of the psychoneuroses. Hypnotism, if used as such, can only drown out faulty beliefs by the acceptance of contrary suggestions and does not cure; in this respect it resembles Christian science. As already stated, the use of hypnotism for the process of analysis is unnecessary. Compulsion neuroses are difficult to eradicate and become more so with advancing years; there is no single method of treatment that will cure with certainty, and the prescription of method must be adapted to the needs in the particular case; sometimes the best that can be hoped for is amelioration of symptoms, but nearly always the period of therapy will be prolonged. The best advice that can be given with the facts presented is that the patient should be seen by a competent psychiatrist who would prescribe whatever seems best for this patient. There is no real conflict between two schools as is suggested in the question; both technics have their uses.

CHEMICAL PRODUCTION OF PUSTULATION

To the Editor:—Can you tell me of a chemical that will produce pustulation such as is caused by croton oil, and one that is more easily obtained and not so costly—one that will cause pustulation without too much erosion of tissue?

M.D., Texas.

ANSWER.—Antimony and potassium tartrate (tartar emetic) is the only other pustulant that has been in vogue. So unpopular has this method become that one must resort to old treatises on materia medica for practical information on the subject. J. A. Paris in his "Pharmacologia" (New York, p. 286, 1825) states that "tartar emetic, when triturated with lard, in the proportion of ℥iss to ℥ii to ℥i of the latter, forms a powerful rubefacient, occasioning a pustular eruption on the skin, and proving serviceable in deep-seated inflammation; or the application may be made by dusting a piece of adhesive plaster with tartarized antimony, taking care to leave a margin untouched that it may more firmly adhere."

TREATMENT OF ECZEMA

To the Editor:—Please outline a course of treatment of chronic eczema in a child 3 years of age. Please omit name.

M.D., Cincinnati.

ANSWER.—Eczema in infants is usually sensitization eczema, associated with food and the gastro-intestinal tract. The children are usually well nourished or overweight. Care should be used to see that the child is on a proper diet and that the bowels move a couple of times a day. This should be brought about by vegetables and fruits in the diet and plenty of water to drink, and not by artificial laxatives. Unless the bowels are made normally loose, the cases are intractable. Nothing is gained, as a rule, by trying to determine specific articles of food to which the child is sensitive. In rare cases food tests may give some information of value about foods that should be eliminated, but generally in these cases the food tests prove useless in practice.

Locally the child should be put on a bland ointment, of which the following is a good example.

Zinc oxide Calamine	ää	1.5 Gm.
Ointment of rose water	to make	25.0 Gm.
Sulphonated bitumen, N. F. (ichthyol)	to color	0.5 cc.

This should not be rubbed in but smeared on and smeared on frequently enough to keep a film of salve over the surface all the time. On parts where it can be done, it is usually best to apply the ointment thickly under gauze—best fine cheese-cloth—dressing. This can be done over the face, when the eruption is bad, by making a mask with holes for the eyes and one for the nostrils and mouth, and with paper, which can be tied behind the head. The gauze dressings spread with salve are put under this. To prevent scratching, aluminum mitts, which are a good deal like a small pair of boxing gloves but made of aluminum, are one of the most practicable things.

ZINC POISONING FROM OXYACETYLENE TORCH

To the Editor:—Will you kindly supply me with any information which you may have available, which would enlighten me as to the nature of the acute intoxication experienced by operators of oxyacetylene torches when working with bronze or galvanized metals?

HARRY LUTZ, M.D., Augusta, Kan.

ANSWER.—Zinc is the source of the acute intoxication arising under the circumstances mentioned in the query. Zinc is the metal used as the coating agent for other metals in the galvanizing process. True bronze is an alloy of copper and tin, but it is common practice to use zinc as a constituent of bronze.

When oxyacetylene torches are applied to such metals, the temperature attained readily vaporizes the zinc, leading to a condition among the torch operators variously known as "metal fume fever," "zinc chills" and "braziers' ague."

The onset of the disease usually occurs during the evening of the day of exposure. The patient has intense thirst, a craving for hot drinks, malaria-like chills, later profuse perspiration and exhaustion. The next day the patient is weak, has a

distaste for all food, and presents a low-grade gastro-intestinal inflammation, usually with constipation. No chronic form is known. A tolerance is believed to develop for a majority of workers. Outdoor oxyacetylene torch workers seldom are involved. Among indoor workers the disease is more often seen during winter months, and especially on rainy or snowy days. Such conditions hamper the prompt dispersion and dilution of the metal fumes.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

Alabama: Montgomery, July 10. Chm., Dr. S. W. Welch, 519 Dexter Ave., Montgomery.

American Board for Ophthalmic Examinations: Minneapolis, June 11. Sec., Dr. William H. Wilder, 122 S. Michigan Ave., Chicago.

American Board of Otolaryngology: Minneapolis, June 11. Sec., Dr. W. P. Wherry, 1500 Medical Arts Bldg., Omaha.

California: San Francisco, July 9. Sec., Dr. Chas. B. Pinkham, 908 Forum Bldg., Sacramento.

Colorado: Denver, July 3. Sec., Dr. Philip Work, 324 Metropolitan Bldg., Denver.

Connecticut: Hartford, July 10-11. Sec., Reg. Bd., Dr. Robert L. Rowley, 79 Elm St., Hartford. Sec., Homeo. Bd., Dr. E. C. M. Hall, 82 Grand Ave., New Haven. State Bd. of Healing Arts, June 9, New Haven. Box 1895, Yale Station, New Haven.

Delaware: Wilmington, June 19-21. Sec., Dr. Henry W. Briggs, 1026 Jackson St., Wilmington.

District of Columbia: Washington, July 10. Sec., Dr. E. C. Copeland, Suite 110, 1801 Eye St., Washington.

Florida: Jacksonville, June 11-12. Sec., Dr. William M. Rowlett, 812 Citizens Bank Bldg., Tampa.

Georgia: Atlanta and Augusta, June 7-9. Sec., Dr. B. T. Wise, Americus, Georgia.

Hawaii: Honolulu, July 9-12. Sec., Dr. James A. Morgan, Honolulu.

Illinois: Chicago, June 26-29. Supt. of Regis., Mr. V. C. Michels, Springfield.

Indiana: Indianapolis, June 19. Sec., Dr. E. M. Shanklin, 421 State House, Indianapolis.

Iowa: Iowa City, June 5-7. Dir., Mr. H. W. Grefe, Des Moines.

Kansas: Kansas City, June 19. Sec., Dr. Albert S. Ross, Sabetha.

Kentucky: Louisville, June 12. Sec., Dr. A. T. McCormack, 532 W. Main St., Louisville.

Louisiana: New Orleans, June 14-16. Sec., Reg. Bd., Dr. Roy B. Harrison, 1507 Hibernia Bank Bldg., New Orleans.

Maine: Augusta, July 2-3. Sec., Dr. Adam P. Leighton, Jr., 192 State St., Portland.

Maryland: Baltimore, June 19-22. Sec., Reg. Bd., Dr. Henry M. Fitzhugh, 1211 Cathedral St., Baltimore. Homeo. Bd., June 12. Sec., Dr. J. S. Garrison, 517 Old Orchard Rd., Ten Hills, Baltimore.

Massachusetts: Boston, July 10-12. Sec., Dr. Frank M. Vaughan, 144 State House, Boston.

Michigan: Ann Arbor, June 12-14 and Detroit, June 18-20. Sec. Dr. Guy L. Connor, 707 Stroh Bldg., Detroit.

Minnesota: Minneapolis, June 19-21. Sec., Reg. Bd., Dr. A. E. Comstock, 524 Lowry Bldg., St. Paul. Sec., Basic Science Bd., Dr. E. T. Bell, Anatomy Bldg., University of Minnesota, Minneapolis.

Mississippi: Jackson, June 20-22. Sec., Dr. F. J. Underwood, Jackson.

Missouri: St. Louis, July 17-19. Sec., Dr. James Stewart, Capitol Bldg., Jefferson City.

National Board of Medical Examiners: Class A Medical Schools, June 13-15. Dir., 608-12 Fifteenth and Locust Sts., Philadelphia.

Nebraska: Omaha, June 21-23. Sec., Reg. Bd., Mr. Lincoln C. Frost, Lincoln.

New Jersey: Trenton, June 19-20. Sec., Dr. Chas. B. Kelley, 30 W. State St., Trenton.

New York: New York City, Albany, Syracuse and Buffalo, June 25-28. Sec., Dr. Harold Rypins, Educational Bldg., Albany.

North Carolina: Raleigh, June 18. Sec., Dr. John W. MacConnell, Davidson.

North Dakota: Grand Forks, July 3. Sec., Dr. G. M. Williamson, Grand Forks.

Ohio: Columbus, June 6-8. Sec., Dr. H. M. Platter, State Savings Bank Bldg., Columbus.

Oregon: Portland, July 10-12. Sec., Dr. M. K. Hall, 816 Pittock Block, Portland.

Rhode Island: Providence, July 5-6. Sec., Dr. B. U. Richards, State House, Providence.

South Carolina: Columbia, June 26. Sec., Dr. A. Earle Boozer, 505 Saluda Ave., Columbia.

South Dakota: Custer State Park (Postoffice, Hermosa), July 17. Sec., Dr. H. R. Kenaston, Bonesteel.

Tennessee: Memphis, Nashville, Knoxville, June 14-15. Sec., Dr. A. B. De Loach, Medical Arts Bldg., Memphis.

Texas: Austin, June 19-21. Sec., Dr. T. J. Crowe, 918-919 Mercantile Bank Bldg., Dallas.

Vermont: Burlington, June 20-22. Sec., Dr. W. Scott Nay, Underhill.

Virginia: Richmond, June 19-22. Sec., Dr. J. W. Preston, Box 444, Roanoke.

Washington: Seattle, July 16. Dir., Reg. Bd., Mr. Charles Maybury, Olympia. Basic Science Bd., July 12. Dir., Mr. Charles Maybury, Olympia.

West Virginia: Martinsburg, July 10. Sec., Dr. W. T. Henshaw, Charleston.

Wisconsin: Milwaukee, June 26-28. Sec., Reg. Bd., Dr. Robert E. Flynn, La Crosse. Sec., Basic Science Bd., Prof. M. F. Guyer, University of Wisconsin.

Wyoming: Cheyenne, June 9. Sec., Dr. W. H. Hassed, State Capitol Bldg., Cheyenne.

AN M.D. DEGREE FIVE YEARS AFTER HIGH SCHOOL*

WILBURT C. DAVISON, M.D.
Durham, N. C.

Every one interested in medical education regrets that 26 years is the average age at which the M.D. degree is received;[1] yet many hesitate to reduce the time required for fear of lowering the present standards. Three years can be taken from this average age and placed on the credit side of a man's life by admitting to medical school younger, intelligent students after two years of college work and by utilizing the summer quarters so that the length of the medical course can be reduced to three years. These ideas are not new[2] but Duke University, unhampered by tradition and previous condition of servitude, will have an opportunity to try the experiment when the School of Medicine opens in 1930 provided, of course, that the medical faculty which has not been appointed approves the plan.

A. AN ENTRANCE REQUIREMENT OF INTELLIGENCE AND CHARACTER PLUS TWO YEARS OF COLLEGE WORK

Thirty-five years ago the entrance requirement of a college degree, which was instituted by the Johns Hopkins University School of Medicine, was undoubtedly advisable, for the high schools and preparatory schools of that time were not all that they might have been, and four years of college work was necessary to obtain a basic education. However, a comparison of the average high school curriculum of today with that of most of the colleges of 1893 is, except for the courses dealing solely with the classics, often in favor of the high school. In other words, the entrance requirement for a college degree in 1928 is comparable to that for a college degree plus four years of postgraduate study in 1893. Is it not time to give the student the benefit of this advance in education and, since now at the age of 18 years he can obtain a preliminary education as good as that formerly received at the age of 22, to admit him to medical school without a college degree? I do not believe, however, that a high school certificate should be accepted for admission to medical school, even though it may now be equivalent to the average college diploma of the early nineties, for the amount of premedical science—chemistry, biology and physics—which a medical student should know today has greatly increased, and two years of college work is necessary in order that the student may obtain this preparation in science.

It is true that 81 per cent of the class A medical schools in this country require only two years of college work for admission,[3] but it is invariably the rule that preference is given to the candidate who has attended college for three or four years. It is the proud boast of most medical deans that their students are practically all college graduates. Why? Probably because of the supposition that the quantity of hours spent in college has some relation to the quality of the student's intelligence and that to enforce the two year requirement would lower the standards. Some schools give a "grade bonus" to college graduates which not infrequently gives a college graduate who has done mediocre work an advantage over a much better student who has applied for admission on the basis of a two or three year preparation.[1]

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* From Duke University School of Medicine.
* Read before the Annual Congress on Medical Education, Medical Licensure and Hospitals, Chicago, Feb. 6, 1928.

1. Rappleye, W. C.: Second report of Commission on Medical Education, January, 1928.

2. Harper, W. R.: Educational Plan, in Goodspeed, T. W.: History of the University of Chicago, Chicago, University of Chicago Press, pp. 140-141. Wilbur, R. L.: Proceedings of the Annual Congress on Medical Education, Medical Licensure and Hospitals, Chicago, February, 1926, pp. 20-21. Bass, C. C.: Discussion of the Quarterly Basis for the Tulane School of Medicine, May 25, 1926; Is It Advisable for Medical Schools of the South to Adopt the Four Quarter System? Read before the Section on Medical Education, Southern Medical Association, Atlanta, Ga., Nov. 15, 1926. Graves, M. L.: The Four Quarter System and the Fifth or Intern Year, South. M. J. **20**: 963-966 (Dec.) 1927. Colwell, N. P.: The Relation of the Quarter System to the Medical Licensing, Federation Bull. **13**: 115-120, 1927.

3. Summary of Admission Requirements of Class A Medical Schools, Bull. A. Am. Med. Coll. **2**: 333-340, 1927.

The careful selection of younger, intelligent students, instead of lowering the present standard of physicians, will probably raise it. Medical education consists of three periods, the premedical, or high school and college, the medical, or medical school, and the postmedical, or hospital internship. All three are important, but under existing conditions the third is often reduced because the medical graduate of 26 or 27 years usually feels that one year is all he can afford to spend in a hospital. Would he be a better physician if he had a longer hospital apprenticeship? The answer is obvious. Two thirds of a group of successful practitioners recently studied[1] had more than one year of internship. Mastery of any subject is impossible in medical school. The student usually acquires a certain number of facts, methods of study, a knowledge of how to approach medical problems and of where and how to obtain more information; but unless the graduate digests and assimilates this mass of education by learning its practical application in a hospital, it is soon forgotten and wasted. Many outstanding medical students have become mediocre practitioners because of this lack of postgraduate training, while three years of hospital work has frequently transformed an average student into a brilliant physician. One need only recall the great mental as well as physical improvement shown by physicians who have developed tuberculosis and have had, against their will, as it were, to obtain from one to three years of additional hospital training at Saranac Lake or other sanatoriums.

I believe that the most important way by which additional hospital training can be made more universally possible is through a reduction in the age of the medical graduate. The premedical and medical periods can and should be shortened. The younger applicants should be given the preference and the entrance requirements should be intelligence and character, plus two years of college work, including two years each of English and chemistry and one year each of biology, physics and mathematics. This preliminary training should fit the keener and more ambitious students for entrance into medical school. Perhaps for the slower student, four years of college work is necessary, but that type is not under discussion here. The objection might be raised that it is too difficult to select this bright student; but the experience at the Johns Hopkins University School of Medicine has demonstrated that this selection is not difficult. There, for the past three years, only those college graduates have been admitted who had intelligence and character, qualifications which have been adjudged from personal interviews and confidential reports from their science teachers rather than from the quantity of their preparation, and the annual number of their failures has been reduced from more than 15 per cent to less than 2 per cent.[4] Our endeavor would be to admit this type of student after his second year in college rather than after he had been graduated. It cannot be denied that, as a result of the sifting process, the chances are that those who survive four years of college work are likely to be a more highly selected group than those who have had only two. However, I feel that if the committee on selection makes the necessary effort, the exceptional students can be recognized. If this experiment does not succeed the entrance requirements can, of course, be changed.

It is realized that the greatest weakness in our present educational system is the time wasted in grammar schools and high schools, and that if the brighter students were allowed to progress in accordance with their capabilities, instead of plodding in lock-step with the average mass, they could profitably enter college at the age of 15 years. President Lowell[5] says: "In our effort to push all children through the educational mill, have we not unwittingly sacrificed the more intelligent to their own damage?" However, this selective type of early education seems to be too expensive and too difficult politically for tax support. The attitude of one superintendent of schools is expressed as follows:[6] "The preparation of boys and girls for college is a mere detail in the broad program of a great high school. Our objective is not to train a chosen few for higher education, but to prepare all our students for American conditions of life." Furthermore, since 82 per cent of physicians do not decide to study medicine until the age of 15 years,[1] this valuable time in grammar and high school is already lost.

In practically all universities, a keen student can obtain the necessary training in English, chemistry, biology, physics and mathematics in the first two years. However, in some institutions those in charge of these departments do not feel that they can adequately teach their subjects in this time. It is undoubtedly true that mastery of any one of these subjects cannot be acquired in two years any more than mastery of any subject in medicine is possible in the time allotted to it in the medical curriculum. Compromises are necessary between those who wish their students to obtain a foundation in science so that they can become well rounded physicians and those who wish to train their students to become expert chemists or physicists, and who look on the problem from the point of view of the gross number of hours allotted to their own subjects. All branches of science have grown so vigorously and have put forth so many offshoots that the question now, to quote Berglund,[7] is "What to teach and what to skip."

The importance of modern languages is frequently emphasized, and an additional year or more in college is recommended for this preparation. Thirty years ago a reading knowledge of German and French was necessary for advancement in medicine, but at present practically all of the foreign medical literature is quickly translated and abstracted, and readily available to those who cannot read the original articles. It is true that the latter are consulted by a small percentage of physicians, but it would seem unnecessary to require every student to spend two or three years in the study of German and French. Those who need this knowledge will acquire it anyway, while those who have it and do not use it will quickly forget it. At the Johns Hopkins University School of Medicine every entering student can read, in some fashion or other, German and French. However, four years later, at the time of graduation, less than 10 per cent of the students can read either language at all as a result of disuse atrophy. Either these languages should be discarded as entrance requirements or else the medical schools should resort to grammar school methods and hold frequent recitations in German and French.

Four years in college are also held to be desirable for their cultural value. However, culture seems to be acquired by some persons without college training and never obtained by others in spite of numerous humanistic courses. As a matter of fact, the majority of those who have culture have gained it at home or from associations and environment early in life. Others, however, with the same advantages remain unsaved. Stewart Roberts[8] has recently commented on the superiority of the culture of British interns. The average British medical student acquires his cultural background at home and at school and rarely studies cultural subjects at a university. At Oxford, for example, all of his time is spent in biology, physics, chemistry, anatomy, physiology and biochemistry.

It is frequently stated that the four years in college are especially valuable for those who later are to do scientific work in medicine. However, it would seem that for his group the requirement of four years of college work, which is enforced either by rule or by preference, is really a handicap. There are many investigators who have spent the major portion of their

4. Davison, W. C.: The Selection of Medical Students, South. M. J. **20**: 955-960 (Dec.) 1927.
5. Lowell, A. L.: Address read before the National Education Association, Boston, Feb. 27, 1928.
6. Boynton, F. D.: Address, read before the National Education Association, Boston, Feb. 27, 1928.
7. Berglund, H.: What to Teach and What to Skip, A. Am. Med. Coll. Proc. 38th Ann. Meeting, Montreal, Canada, Oct. 24-26, 1927.
8. Roberts, Stewart, in discussion on Changes Suggested for the Medical Curriculum, South. M. J., to be published.

four years in college in the study of biology and who now find in their chosen field that a training in chemistry would have been preferable. If these men were two years younger, they could return for the additional basic training in chemistry.

It is sometimes stated that a medical school cannot obtain a sufficient number of these outstandingly intelligent students to fill the class. Consequently, medical schools which must fill their classes to capacity hesitate to maintain a rigid entrance standard based on the students' intelligence and character, and prefer to select students on the basis of the quantity of their preparation, for it is easier to fill a medical school class with college graduates than it is with students who are keen and ambitious. It is probably true that the Duke University School of Medicine will not be able to fill its classes to capacity with this type of student but, if not, the classes will not be filled to capacity, for the late Mr. James B. Duke, in his deed of gift,[9] requested "that great care and discrimination be exercised in admitting as students only those whose previous record shows a character, determination and application evincing a wholesome and real ambition for life."

Many committees on admission grant the reasonableness of these contentions but give the applicant with a college degree the preference on the grounds that the four years in college have certainly not done the student any harm and that most students will spend the additional time in college with very little urging. I am not at all sure that the additional time in college is without harm for, in colleges in which the gifted student is not given special advantages,[10] so little effort is required for the keener students to maintain the college standards which are set for the average mass that habits of academic indolence frequently develop.

One argument advanced in favor of the collegiate degree for entrance is that since the college graduate is older he therefore is more mature, more responsible, more serious and more industrious. It is probably quite true that students 22 years of age work harder than those two or three years younger; but their doing so is more of a necessity than a virtue: they must work harder because they usually learn more slowly. As a matter of fact, if the admission committee performed its function properly, it could select applicants who had these desirable qualities in spite of being only 19 or 20 years of age.

A college degree has also been recommended in order that the present age at which a physician enters practice may not be reduced. I do not agree that a physician or surgeon need be over 28 years of age[11] before he can assume the responsibilities of practice, for there are too many outstanding examples to the contrary in this country and abroad; but, even granting this, I believe that two additional years in a hospital or laboratory after graduation will be more valuable training than two additional years in college before entering medical school. I am making a plea for younger medical graduates rather than for younger practitioners. Let the same age for engaging in practice be maintained if that is desirable, but send a better trained man into practice.

There is also a tradition that students who have had four years of college work make better records in medical school than those who have had two or three years. But do these students maintain this record because of their additional training or because they were keener and more ambitious anyway? On the other hand, to quote Manning,[11] "We have had in our classes year after year students with two, three and four years of college and I doubt that any one except the dean knows who of the students have had two, or three, or four years of college. In spite of the fact that the majority of students entering medical school today are college graduates, the percentage of failures during the first two years in medical school is practically as high as it was fifteen years ago when the majority of medical students had only one or two years of college preparation." It is interesting that more than half of the group of successful practitioners recently studied had two years or less of college work before entering medical school.[4]

One of the greatest difficulties in the way of persuading the keener type of students that an entrance requirement of two years of college is sufficient is the great desire on the part of most of them to have a college degree and to graduate with their class. This dilemma is solved in some institutions by granting a B.S. or an A.B. degree after two years of college and two years of medical school. This pernicious system of granting double rewards for the same work has debased the value of these degrees. A better policy would be to grant a B.S. degree to medical students who, in their free time in medical school, had done creditable, extra work in one or another department and had written a thesis. In this way the degree would represent additional work accomplished and would also serve as an incentive and stimulus to acquire more medical knowledge than was required for the M.D. degree. It is expected that this plan will be adopted at the Duke University School of Medicine.

TABLE 1.—*Calendar for Curriculum for Four Quarters of Eleven Weeks Each (1927-1928)*

Autumn quarter, *October 3 to December 23*	
Thanksgiving vacation	*November 22 to 28*
Christmas vacation	*December 23 to January 2*
Winter quarter, *January 2 to March 17*	
Winter vacation	*March 17 to 26*
Spring quarter, *March 26 to June 9*	
Spring vacation	*June 9 to 18*
Summer quarter, *June 18 to August 31*	
Summer vacation	*August 31 to October 1*

This whole problem of two or four years of college work for entrance to medical school naturally raises the question of the origin and rationale of the four year college course. Apparently the four year curriculum dates back to the statute adopted in February, 1252, which specified that students of the English nation at the University of Paris should study at least four years for the bachelor's degree.[12] In the British and European universities there is no such set time period. Their students, after fulfilling certain minimal requirements, take the examinations for their degrees as soon as they feel that they are in a position to pass them. At Oxford, "Candidates for the degree of Bachelor of Arts are required to pass three examinations, and to keep nine Terms (three academical years) by residence."[13] Some students wait six years before qualifying, while those with senior standing can do so in two years.

There is a movement on foot at present to break away from the four year rule. In the academic department of the Johns Hopkins University, students who have creditably completed the first two years of college, either there or elsewhere, will be admitted to untrammeled study in any academic department. In various cities throughout the country junior colleges have been created in connection with the high schools at which a student may obtain the equivalent of the first two years at a university. At one well known university some of the alumni, realizing that many of the students are more interested in obtaining a college degree for social and business purposes than in acquiring an education, have proposed that the course be shortened to two years. In other words, junior colleges of freshmen and sophomores and senior colleges of juniors and seniors may become part of our educational structure.

9. Jenkins, J. W.: James B. Duke, Master Builder, New York, George H. Doran Company, 1927, p. 294.
10. Few, W. P.: The Gifted Student and the American College, President's Report to the Trustees of Duke University, 1928.
11. Manning, I. H., in discussion on Davison (footnote 4).
12. Wilkins, E. H.: IV. The Reasons Why Four Has Become the Accustomed Number of Years in the Extension of Academic and Professional Curricula, J. Dental Research **7**: 513-514, 1927; Bull. Am. A. Coll. Registrars **2**, number 4, 1927.
13. University of Oxford, General Information Concerning Admission, Residence, etc., Oxford at the Clarendon Press, July, 1926, p. 7.

B. A CURRICULUM OF THREE CALENDAR YEARS OF FORTY-FOUR WEEKS EACH

Another year can be saved by condensing the four medical school years of thirty-three weeks each into three years of forty-four weeks each (table 1). The advantages to the medical student are obvious. He will be one year younger at

TABLE 2.—*Curriculum Based on Four Quarters of Eleven Weeks (429 Hours) Each*

	Hours		
First Year			
Autumn quarter (1st)			
Anatomy (including histology)	429		
Free time		0	
Total			429
Winter quarter (2d)			
Physiology	160		
Biochemistry	144		
Free time		125	
Total			429
Spring quarter (3d)			
Pharmacology	56		
Bacteriology	88		
Psychobiology	16		
Free time		269	
Total			429
Summer quarter (4th)			
Free time		429	
Total			429
Second Year			
Autumn quarter (5th)			
Pathology	288		
Free time		141	
Total			429
Winter quarter (6th)			
Clinical microscopy	96		
Medical psychology	16		
Physical diagnosis	160		
Preclinical examinations	39		
Free time		118	
Total			429
Spring quarter (7th)*			
Medicine (junior) (including pediatrics)	296		
Free time		133	
Total			429
Summer quarter (8th)*			
Surgery (junior)	144		
Obstetrics (including gynecology)	108		
Free time		177	
Total			429
Third Year			
Autumn quarter (9th)*			
Specialties (junior)	112		
Free time		317	
Total			429
Winter quarter (10th)*			
Medicine (senior) (including pediatrics)	312		
Free time		117	
Total			429
Spring quarter (11th)*			
Surgery (senior)	256		
Free time		173	
Total			429
Summer quarter (12th)*			
Final clinical examination	39		
Free time		390	
Total			429
Summary:			
Total number of hours of required instruction	2,759 (54%)		
Total number of hours of free time	2,389 (46%)		
Total number of hours in curriculum	5,148 (100%)		

* The clinical instruction should be repeated each quarter in order to utilize all the clinical material and to have small groups of students. Consequently, students may vary the order of the seventh, eighth and ninth quarters; and also the order of the tenth, eleventh and twelfth quarters.

graduation and will have an additional year for hospital or other training; he will be better prepared, for he will not have lost a fortnight or a month in October of each year getting back into the intellectual stride which had been his in the preceding June, and he will see the clinical material peculiar to the summer months.

The disadvantages to the medical student have been overemphasized. For example, it is said that he needs the four months of vacation. However, practically all medical students at the present time work during their summer holidays; 50 per cent study preclinical or clinical subjects in some place or other and if this time were spent under supervision at a medical school the character of the work would be improved and much valuable time saved. The 50 per cent who earn money during the summer vacations could probably earn more in the year which they will save under the four-quarter system than in the three periods of four months each. The establishment of loan funds, rather than scholarships, will do much to solve this phase of the problem. It has been said that a medical student cannot physically endure the work of forty-four weeks a year. If so, he probably should enter some less arduous occupation, for as a physician he undoubtedly will have to work as hard or harder for longer than forty-four weeks a year. The total of eight weeks of vacation, which every student will have under the four-quarter system (table 1), should be sufficient for any one. The argument that the summer climate of

TABLE 3.—*Changes from the Four Quarter Schedule Necessary for Students Who Do Not Attend the Summer Quarters*

First Year:
- Autumn quarter (1st)—No change from schedule
- Winter quarter (2d)—No change from schedule
- Spring quarter (3d)—No change from schedule

Second Year:
- Autumn quarter (4th)—Same as fifth quarter in schedule
- Winter quarter (5th)—Same as sixth quarter in schedule except that the preclinical examinations are postponed to the end of the spring quarter and the amount of free time increased correspondingly to 157 hours
- Spring quarter (6th)—Same as fourth quarter except that the preclinical examinations are held and the amount of free time correspondingly decreased to 390 hours

Third Year:
- Autumn quarter (7th)—Same as seventh quarter in schedule *
- Winter quarter (8th)—Same as eighth quarter in schedule *
- Spring quarter (9th)—Same as ninth quarter in schedule *

Fourth Year:
- Autumn quarter (10th)—Same as tenth quarter in schedule *
- Winter quarter (11th)—Same as eleventh quarter in schedule*
- Spring quarter (12th)—Same as twelfth quarter in schedule*

* The clinical instruction should be repeated each quarter in order to utilize all of the clinical material and to have small groups of students. Consequently, students may vary the order of the seventh, eighth and ninth quarters; and also the order of the tenth, eleventh and twelfth quarters.

Durham or of any other city would be injurious to medical students would be vigorously answered by weather statistics of chambers of commerce, and also by the realization that the major part of the population remains at work all summer and that practically all the physicians continue their practices. As a matter of fact, if any student prefers to study four calendar years of thirty-three weeks each he can do so under this flexible curriculum (table 3). A certain number of students, either through illness or through financial difficulties, will probably be absent one or more quarters, but under this curriculum they can take up their work at the beginning of the next quarter and not lose a whole year as is necessary at present. This irregularity is in itself an advantage, for it will reduce the usual rigid lock-step succession of studies.

The fear has been expressed that if the four-quarter system were adopted it would be necessary to repeat numerous courses in order to accommodate both the students who desire the four-quarter system and those who attend only three quarters, and that a much larger number of teachers and a greater medical school budget would be required so that the staff could have the present academic vacations.

It is probably true that under the rigid curriculums used in most medical schools it would be necessary to repeat several required courses in order to accommodate the students who did

not attend the summer quarters. However, if the present schedule of the Johns Hopkins University School of Medicine,[14] which has many advantages,[15] were adapted to the four-quarter system, as suggested in tables 1, 2 and 3, all the required preclinical courses would need to be given only once a year. The clinical courses would be repeated each quarter in order to utilize all the clinical material and to have small groups of students. At first glance this would seem a hardship for the clinical staff; but, as this teaching is largely the demonstration of patients in the wards and outpatient department, it is very little if any more effort than attending these patients, which must be done anyway. As a matter of fact, medical students, after their first month of clinical training, are a great help in the care of patients and in the administration of the wards and the outpatient department. The vacations without students are usually more laborious than with them.

Approximately one half of the time in this curriculum (table 2) is free for elective work or anything else which the student wishes to do. In the first year the greatest amount of free time is concentrated in the latter part of the year in order to give the student a more varied curriculum early in his course and thus enable him to choose elective courses from a wider range of subjects. The summer quarters of the first and third years have been left entirely free in the hope that many of the students will migrate to other medical schools in this country or abroad for elective work, a practice which should be encouraged. The establishment of the four quarter system at Chicago, Tulane and other universities will greatly aid this exchange of students. For students who do not attend the summer quarters, the spring quarters of the second and fourth years are free for the same purpose (table 3). The students who do not transfer temporarily to other medical schools may utilize their free time in elective courses in preclinical and clinical departments, may pursue independent work in any subject or may do research work. The elective courses should be organized for small groups and repeated if necessary in one or more quarters.

Comprehensive group examinations in the preclinical subjects would be given to the students as soon as they had completed six quarters, and in the clinical subjects at the end of the twelfth quarter. These examinations would be held at least twice each year to accommodate students who qualify for them at different times. They would demand a more comprehensive knowledge of medicine than could be obtained from the required courses in the schedule, and it would be necessary for the student to demonstrate that he had profitably utilized his free time.[15]

This curriculum is extremely flexible and, except for first year students, those who transfer from other medical schools can be admitted into any quarter for which their previous training has fitted them. For example, a student from a two-year medical school could enter the summer quarter in June and graduate in December of the following year, at the end of his twelfth quarter, or he could enter in October and graduate in March or June two years later, depending on whether he attended the intervening summer quarter. First year students would all be admitted at the same time in October in order to start their medical training with the required course in anatomy.

The size of the average staff and budget need not be increased in order to carry out this curriculum, for instead of all the members taking their vacations at the same time they could arrange the teaching and decide among themselves the quarter during which each instructor would be away. It would be a great advantage to any member of the staff to be able to take his vacation during the months in which most medical schools in this country and abroad are in session. Furthermore, it would divide the responsibility of departmental administration and give each first assistant an opportunity during the quarter in which his chief is away to gain the experience which he needs and does not usually get. It is, of course, essential that the quality of the instruction during the summer quarter should be maintained at the highest level and not allowed to reach the depths of some summer courses.

There are numerous other advantages in the four quarter system—the tremendous capital invested in medical schools will not be idle one third of the time; the clinical material of the hospitals will be better utilized; the patients will receive better care, and the size of the individual classes can be reduced, or if the present size of the classes is maintained more students can be accommodated.

This three year plan is apparently acceptable to the medical boards of licensure of thirty-one states[16] and it is hoped that the other seventeen will accept an intern year in lieu of the fourth calendar year of medical school.

CONCLUSION

The present standards of physicians can be maintained and in fact probably improved if preference in admission is given to carefully selected younger students who have intelligence and character plus two years of college work, and if the M.D. degree is given after the completion of three medical school years of forty-four weeks each. The rigid selection of students is the essential factor in the success of this experiment.

14. Johns Hopkins University School of Medicine, Bull. A. Am. Med. Coll. 2: 341-344, 1927.

15. Baker, L. H.: An Experiment with the Curriculum, A. Am. Med. Coll. Proc. 38th Ann. Meeting, Montreal, Canada, Oct. 24-26, 1927. Davison, W. C.: Liberalizing the Curriculum, South. M. J., to be published.

16. The Quarter System in Medical Education, Council on Medical Education, pamphlet 159; Choice of a Medical School, Nov. 1, 1927, p. 20.

California January Reciprocity Report

Dr. Charles B. Pinkham, secretary of the Board of Medical Examiners of the State of California, reports that 47 physicians were licensed by reciprocity and that 3 physicians were licensed by endorsement of their credentials. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Howard University School of Medicine		(1894)	N. Dakota
Emory University School of Medicine		(1925)	Georgia
American Medical Missionary College, Chicago		(1901)	Nebraska
Chicago College of Medicine and Surgery		(1917)	Illinois
Northwestern University Med. School.	(1890) Oregon,	(1906)	Illinois
Rush Medical College		(1907)	Hawaii
Indiana University School of Medicine		(1913)	Indiana
State University of Iowa College of Medicine		(1918)	Iowa
Kansas Medical College, Topeka		(1905)	Kansas
University of Louisville School of Medicine		(1924)	Virginia
Johns Hopkins University School of Medicine	(1906), (1922), (1923) Maryland,	(1925)	Louisiana
Harvard University Medical School		(1893)	Illinois
University of Michigan Medical School		(1906)	Michigan
University of Minnesota Med. School.	(1916), (1923),	(1927)	Minnesota
St. Louis College of Physicians and Surgeons		(1899)	Oklahoma
St. Louis University School of Medicine		(1925)	Missouri
Washington University School of Medicine		(1917)	New York
Creighton Univ. School of Med.	(1921) New York,	(1924)	Nebraska
University of Nebraska College of Medicine	(1919) Nebraska	(1914)	S. Dakota
Columbia University College of Physicians and Surgeons		(1918), (1925, 2)	New York
Fordham University School of Med., New York City.		(1917)	New York
Long Island College Hospital		(1926)	Nebraska
University and Bellevue Hosp. Med. College.		(1924), (1925)	New York
Ohio State University College of Medicine		(1922)	Ohio
Western Reserve University School of Medicine		(1925)	Ohio
University of Oregon Medical School		(1919)	Oregon
Hahnemann Medical College and Hospital of Philadelphia, Homeopathic		(1917)	Penna.
Jefferson Medical College of Philadelphia	(1919) Pennsylvania; (1921) Utah; (1923) New York	(1918)	Wisconsin
University of Nashville Medical Department		(1901)	N. Dakota
Vanderbilt University School of Medicine		(1925)	N. Carolina
McGill University Faculty of Medicine		(1924)	Mass.
University of Toronto Faculty of Medicine		(1892)	Missouri
University of Moscow, Russia		(1901)*	Washington

College	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement with
Tulane University of Louisiana School of Medicine		(1915)	U. S. A.
University of Maryland School of Medicine and the College of Physicians and Surgeons		(1885)	U.S.P.H.S.
University of Cincinnati College of Medicine		(1925)	U.S.P.H.S.

* Verification of graduation in process.

Book Notices

ASTHMA: Its Diagnosis and Treatment. By William S. Thomas, M.D., Associate Attending Physician in Immunology, St. Luke's Hospital, New York. Cloth. Price, $7.50 net. Pp. 279, with 26 illustrations. New York: Paul B. Hoeber, Inc., 1928.

For the past quarter of a century the problem of asthma has received considerable attention from investigators. There is need for a treatise that will acquaint the profession at large with what progress has been made and what the actual status of our knowledge is as regards the treatment and management of this syndrome. However, while his purpose is laudable, Dr. Thomas fails to present a clear statement of the situation. At the close of the book he says: "When the unconversant reader sees many methods of treatment being praised, he is naturally perplexed. He wonders where to turn and perhaps becomes skeptical; the more so if he sees superficial workers obtaining disappointing results, even when using those methods which, if rightly employed, can bring satisfactory results." Yet this is exactly the state of mind of the reader when he has completed this book. Although protein sensitization is presented as the great advance in the treatment of this syndrome, after a searching reading of this treatise the impression gained is that the author still grasps at every straw to alleviate asthma. The author places in first rank an insufficiently tried drug, such as ephedrine. He extols the virtues of vaccine therapy, which is still a matter of controversy, without any attempt to give the opposing points of view, and his proof is meager and unconvincing. He stresses unduly palliative measures and nonspecific treatment, which is certainly out of order in a modern treatise endeavoring to gain the acceptance of the concept of the allergic basis of asthma. To the conversant reader he offers nothing new, and certainly a feeling that the subject has been inadequately dealt with. It is also a sad commentary, in carefully checking over the references, to realize that the formidable array placed at the end of the book was not as carefully studied as it might have been. In view of the fact that our greatest advance has been in linking up dermal phenomena with this syndrome, as Dr. Thomas himself states in his preface, it certainly is a pity that the author should have expended so much time on palliative measures and nonspecific treatment, so that on completing the book one looks back and wonders whether or not protein sensitization is of real merit in the treatment of asthma.

GREFFE OVARIENNE ET ACTION ENDOCRINE DE L'OVAIRE. Étude histologique, biologique, clinique et chirurgicale. Par Vittorio Pettinari. Paper. Price, 70 francs. Pp. 487, with 181 illustrations. Paris: Gaston Doin & Cie, 1928.

This monograph is a mixture of the good and the bad. The author is, or was, an assistant in the clinic and laboratory of Dr. S. Voronoff in Paris. He is a prolific writer, as on the first page of the monograph are listed thirty-five separate publications in various journals, all of them appearing between 1922 and 1927. The present monograph also bears evidence, at least in some of the chapters, of a plethora of words. The chapters in which the author deals with the technic and effects of ovarian grafting in the lower mammals are most satisfactory. On this subject fairly concordant results from many investigators in different parts of the world are now available; it has been established that in such animals as the rat and the guinea-pig a percentage of ovarian grafts, autotransplants and heterotransplants, as well as grafts of ovaries into normal active males, succeeds and the grafted ovary remains in varying degrees of functional activity for varying lengths of time. The present monograph adds nothing essentially new to this phase, or to the question in the subsidiary title, namely, the internal secretory functions of the ovary. The chapters dealing with ovary transplantation in man are less satisfactory. As an example, chapter 14 is headed "Indications of Ovarian Grafting in Man." In this chapter the author recommends ovarian grafting in infantilism, congenital hypoplasia and retarded development; after spaying and pathologic menopause; in osteomalacia; in amenorrhea and dysmenorrhea; in sterility; in the normal menopause; in ovarian insufficiency; in pluriglandular disturbances; in neurosis and psychosis, and in senescence. Under the heading of ovarian insufficiency he quotes, apparently with approval, Triklice ovarian insufficiency syndromes as follows: amenorrhea, dysmenorrhea, periodic migraine, vasomotor disturbances, insomnia, modification of character, neuroses, mental disturbances, oppression, palpitation, asthma, gastro-intestinal disturbances, and tendency to obesity. In loyalty to his chief, Dr. Voronoff, he lists senescence and also, apparently with approval, endemic goiter (advocated by Dr. Brugnatelli). This list of indications for ovarian transplantation in women would seem to make ovarian grafting almost as universal as phlebotomy a hundred years ago. The author is a firm believer and advocate of the general "dymogenic" or rejuvenating effect of ovarian transplantation. We are assured by the author that, in the case of monkey ovaries transplanted into women, such a rejuvenating effect on the sex life is the only effect produced and that the women's other physical or mental processes remain human. We are also told that there is no special difficulty or contraindication in the transplantation of ovaries from monkeys into women. It is purely a question of choice and availability of material at the moment. The histologic illustrations from work on lower mammals are good. Some of the other illustrations are less to the point and merely swell the size and increase the cost of the book: for example, the two photographs of monkeys on pages 428 and 429, and the photographs, front and rear view, of the cage in which the monkeys are anesthetized for the purpose of the gland operation, pages 435 and 436. The monograph is essentially a product of the Voronoff school. It reveals more enthusiasm than critical judgment. Despite the length of the chapters and the numerous illustrations of the histologic and ovarian grafts in the lower animals, it leaves still open the essential question; namely, that of the length of life and functional activity of ovarian grafts from monkey to man.

BRAIN AND MIND OR THE NERVOUS SYSTEM OF MAN. By R. J. A. Berry, M.D., F.R.C.S., F.R.S., Dean of the Faculty of Medicine in the University of Melbourne. Cloth. Price, $8. Pp. 608, with 131 illustrations. New York: Macmillan Company, 1928.

In part I there is a detailed description of the anatomy of the brain and nervous system, including its evolution, embryology and development during life. The intimate relation between mental capacity and the structure of the cerebral cortex is emphasized. The author brings out clearly the fact that mental deficiencies, of high or low grade, criminal, antisocial and other abnormal tendencies, hysterias and neuroses are generally associated with a reduction of the number of neurons in the cerebral cortex. Such patients are usually microcephalic though sometimes macrocephalic, and are subnormal in stature, in muscular efficiency and in vital capacity. The reduction of the number of neurons in the cerebral cortex which may be due to heredity, to congenital or birth trauma, to vascular changes or to disease, is given as the fundamental cause of the amentias and dementias. In part II the nervous system in health and disease is discussed from this point of view. Sleep, dreams and emotions are considered on an organic basis and not from the point of view of the psychoanalyst of the freudian or other schools. Cerebral underdevelopment or amentia, cerebral dissolution or dementia and their association with changes in the microscopic structure of the cortex are discussed. The frequent association of hysterias and neuroses with high grade amentia is brought out. The relation between size of the head and of the brain and its importance is emphasized. The author outlines in detail his method of making a clinical diagnosis of amentia; to the current clinical methods he adds estimations of the cubic capacity of the brain, of the standing and sitting stature and weight, of the grip and vital capacity, and of the Binet and Porteus reactions. He insists that frequently a definite diagnosis cannot be made unless all these factors are considered, and that injustice may be done to the patient when they are not. A few illustrative cases are cited. There is an extensive bibliography. "The argument between Plato and Aristotle continues. The Vitalists viewing man as Energy, the structuralists as a Machine, cannot yet compose their differences. . . . The notion describ-

ing each individual as a transformer of power is perhaps a compromise position truer than either. Around this general theme Professor Berry has written a stimulating, provocative and doubtless controversial book, one therefore to be urged on students that their vision may be widened, that they may be made aware of the three dimensional nature of the human nervous system and that they may be led at least to suspect it of fourth dimensional qualities for the appreciation of which the requisite neuronic apparatus awaits development."

ON ROUS, LEUCOTIC AND ALLIED TUMOURS IN THE FOWL. A Study in Malignancy. By J. P. McGowan, M.A., B.Sc., M.D., Pathologist to the Rowett Research Institute, Aberdeen. Cloth. Price, 10 shillings net. Pp. 99, with 21 illustrations. London: H. K. Lewis & Company, Ltd., 1928.

This volume resulted from encountering spontaneous sarcomas in fowls during an investigation of diseases of the blood in which leukemia of fowls was studied, as described by the author in Pernicious Anaemia, Leucaemia and Aplastic Anaemia (London, H. K. Lewis & Co., Ltd., 1926). A classification, largely that of Maximow's, is used in discussing the varieties of cells of the blood and their origin. Trypan blue intravital staining was carried out with fowls with the experimentally produced Rous sarcoma number 1 and others with naturally occurring tumors of that type. A monocytosis was found in the blood of such birds and the general trend of the work is toward presenting evidence for a close relationship between such tumors and the leukemic diseases of fowls. The author states, for example, that "tumor is a local manifestation of disease in a system," and, again, that "these spontaneous tumors were associated secondarily with the presence of leukotic lesions of the myeloid type." The illustrations are mediocre. The descriptions of the fowl tumors examined by the author and studies of the blood of the tumor-bearing birds are of real value. Some of the tumors were melanogenic. The name stimulin is used in referring to what most investigators of these foul tumors have designated as filtrable viruses. McGowan believes that the stimulin is produced by the tumor cells and is carried by the fluid of the blood as well as by its cells, and that its action is specific, in that proliferation is instigated in only certain types of cells. This little volume will be welcomed by investigators in this and kindred fields.

NATURWISSENSCHAFTLICHE REIHE. Herausgegeben von Dr. Raphael Ed. Liesegang. Band XIX. Hormone und innere Sekretion. Von Dr. Fritz Laquer, Privatdozent an der Universität Frankfurt a.M. Paper. Price, 8.50 marks. Pp. 136. Dresden: Theodor Steinkopff, 1928.

In the plethora of monographs on endocrine glands that are being published today, this short monograph of Dr. Laquer ranks among the best, from the point of view of brevity and reliability. The author has succeeded in an admirable manner and with rare judgment in selecting and organizing the known facts in this important field. Hypotheses and vagaries are largely excluded. The author does not attempt, and it would be impossible in the few pages of this book, to treat in extenso the organotherapy aspect of the endocrines; the histologic aspects are also largely eliminated. It is essentially an excellent summary of the biochemical and the physiologic knowledge of the endocrine glands. As an index of the author's admirable judgment and scientific caution, a group of glands and substances are treated briefly in the last chapter under the general heading of "Hormones of Hypothetical Nature." Here the author includes the pineal body, the so-called heart hormone of Loewi, the spleen, the liver, the salivary glands, and cholin. At the end of the book is an appendix containing a bibliography of 1,200 titles arranged under the subject matter of the chapters of the book.

MY LIFE TRANSFORMED. By Helen Heckman. Cloth. Price, $2.50. Pp. 202, with illustrations. New York: Macmillan Company, 1928.

At 12 years of age Helen Heckman was deaf, dumb and mentally undeveloped. When she was 13 years old she began to receive special educational attention from her mother. In her autobiography she tells how she learned, how she was normalized, and how she became eventually, through a knowledge of lip reading, travel and study, a woman with a career. She dances and practices piano playing without help. Her book will be an inspiration to those physically handicapped and willing to make the most of the abilities they have.

L'INFECTION BACILLAIRE ET LA TUBERCULOSE CHEZ L'HOMME ET CHEZ LES ANIMAUX. Processus d'infection et de défense, étude biologique et expérimentale vaccination préventive. Par A. Calmette. Third edition. Paper. Price, 125 francs. Pp. 883, with illustrations. Paris: Masson & Cie, 1928.

As might be expected, the third edition of this well known and valuable book presents a new and extended consideration of that subject to which the author has been devoting his chief attention in recent years, preventive vaccination against tuberculosis. This topic, to which four pages were assigned in the second edition (1922), has been expanded to ninety pages, and, quite significantly, Preventive Vaccination is now included in the subtitle.

The progress of Calmette's effort to eradicate tuberculosis by preventive inoculation of new-born children with an attenuated culture of tubercle bacilli, reduced in virulence by prolonged growth on a biliated medium, has been followed in the editorial colums of THE JOURNAL and need not be repeated here. In the new edition of his book Calmette reviews the fundamental principles involved, describes his early animal experiments with Guérin, gives the technical details for the preparation and use of the vaccine, and with commendable conservatism briefly summarizes the results of the largest experiment of this kind ever carried out, which now numbers more than fifty thousand subjects in its scope. It is only fair to state, however, that Calmette himself feels the procedure has passed the experimental stage, and that the results so far achieved justify expansion on a world-wide scale.

Another subject that has engaged the author's interest in recent years also comes in for special although not such extensive consideration; viz., the filtrable form of the virus of tuberculosis. Calmette's acceptance of the evidence for its existence at once puts him in a position of such embarrassing possibility that he himself feels the necessity of anticipating objections. It is well known that in certain other diseases, the infective agent of which is filtrable, the contagion passes the placenta, and the fetus is born infected. If the virus of tuberculosis is likewise filtrable, prenatal infection through the placenta of tuberculous mothers should be common. The central idea of the Calmette method for the present preventive treatment of tuberculosis is the vaccination of the offspring of tuberculous mothers within the first ten days of life before infection from intimate contact with their tuberculous mothers can take place. Faced with this paradox, the author falls back on empiric results indicating the rarity of demonstrable congenital infection, on the one hand, and the proved effectiveness of vaccination, on the other, without feeling compelled to give up his belief that a filter-passing form of the tubercle bacillus may be present commonly in tuberculous lesions.

Extension of the subject matter is not confined to these two sections. With the able collaboration of his colleagues A. Boquet and L. Nègre, themselves distinguished in a number of the fields touched, the author has covered the recent advances in the chemistry and biology of the tubercle bacillus, the chemistry of tuberculin, and immunologic reactions. Details highly useful to investigators are given on the susceptibility of various laboratory animals to tuberculosis and the best means of inoculating them. It is significant for the author's point of view that "Sanocrysin," on which an enormous literature has accumulated in the last five years, is disposed of in a few pages with a simple but frankly stated doubt of its usefulness in the treatment of pulmonary tuberculosis.

The author has found no occasion to modify his well known belief that the alimentary canal is the usual portal of entry for the disease. The sections devoted to the pathologic anatomy and pathogenesis of tuberculosis are in general unchanged.

The comprehensive discussion of fundamental principles in tuberculosis together with the special treatise on a prophylactic method, which will inevitably receive increasing attention from public hygienists until its efficacy is proved or disproved, should make the book of exceptional interest to clinicians. It will remain, as heretofore, indispensable to the scientific investigator in the study of tuberculosis.

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for more extensive review in the interests of our readers and as space permits. Books listed in this department are not available for lending. Any information concerning them will be supplied on request.

RACE MAKING. A Practical Natural Method of Self-Determination and Control. A Few Suggestions to Women on the Importance of Their Work in Race Making. By Mrs. David McConnel, B.A. Paper. Pp. 34, with charts. London: Health for All Publishing Company, 1928.

Views of a lady who thinks that girls are made the first three days after menstruation and boys thereafter. Birth control is practiced by utilizing the eleventh, twelfth and thirteenth days only, which she says is more than sufficient. Oh! very well.

THE CHILD'S DEVELOPMENT AND HEALTH RECORD. By Harold O. Rugh, A.B., M.D., Chief of the Pediatric Service of St. Luke's Hospital, Cleveland, Ohio, and Justin A. Garvin, B.S., M.D., Visiting Pediatrician of St. Luke's Hospital, Cleveland, Ohio. Cloth. Price, $2.50. Pp. 107. New York: D. Appleton & Company, 1928.

A suitable record book for tracing the growth of the child with a statement of normals.

AN ELEMENTARY MANUAL OF PHYSIOLOGY: For Colleges, Schools of Nursing, of Physical Education, and of the Practical Arts. By Russell Burton-Opitz, S.M., M.D., Ph.D., Attending Cardiologist, Lenox Hill Hospital, New York. Third edition. Cloth. Price, $2.50 net. Pp. 419, with 147 illustrations. Philadelphia: W. B. Saunders Company, 1928.

New edition of a well recognized manual.

THE ULTRA-VIOLET RAYS: Their Action on Internal and Nervous Diseases and Use in Preventing Loss of Color and Falling of the Hair. By Arnold Lorand, M.D., Physician at the Carlsbad Springs, Czecho-Slovakia. Cloth. Price, $2.50. Pp. 258. Philadelphia: F. A. Davis Company, 1928.

A great deal of hocus collected by a medicoliterary hack-writer and presented in a well printed opus under two good covers.

THE LAZY COLON. Newer Methods and Latest Advances of Science in the Treatment of Constipation. By Charles M. Campbell, Associated with Albert K. Detwiller, M.D. Fifth edition. Cloth. Price, $3. Pp. 312, with illustrations. New York: Educational Press, 1928.

Widely advised work for the public relative to constipation and the care of the bowels—not so good.

STUDIES IN THE PSYCHOLOGY OF SEX. Volume VII. Eonism and Other Supplementary Studies. By Havelock Ellis. Cloth. Price, $5. Pp. 539. Philadelphia: F. A. Davis Company, 1928.

Presentation of unusual forms of sexual activity with adequate discussions of available literature.

DIE WECHSELJAHRE DES MANNES. Von Professor Dr. A. Hoche. Paper. Price, 3.60 marks. Pp. 71. Berlin: Julius Springer, 1928.

So men do not have their climacterics.

LA ESTÉTICA FACIAL. Por Francisco Montañá. Paper. Price, 4 ptas. Pp. 158, with 4 illustrations. Barcelona: Arnau de Vilanova, 1928.

Handbook of beauty treatments.

ELEMENTARY BACTERIOLOGY. By Joseph E. Greaves, M.S., Ph.D., Professor of Bacteriology, Utah Agricultural College, and Ethelyn O. Greaves, M.S. Cloth. Price, $3.50. Pp. 506, with 129 illustrations. Philadelphia: W. B. Saunders Company, 1928.

TUBERCULOUS INTOXICATIONS, CONCEALED AND MASKED TUBERCULOSIS. A Clinical Study. By Joseph Hollós, M.D., Pathologist of St. Vincent's Hospital, Staten Island, New York. Cloth. Pp. 131, with 3 charts. Edinburgh: E. & S. Livingstone, 1928.

PROCEEDINGS OF THE WORLD POPULATION CONFERENCE HELD AT THE SALLE CENTRALE, GENEVA, AUGUST 29TH TO SEPTEMBER 3RD, 1927. Edited by Mrs. Margaret Sanger. Cloth. Pp. 383, with illustrations. London: Edward Arnold & Company, 1927.

LEAGUE OF NATIONS—HEALTH ORGANISATION. International Health Year-Book, 1927. (Third Year.) Reports on the Public Health Progress of Twenty-Seven Countries in 1926. Paper. Pp. 802. Geneva: League of Nations, 1927.

ESTUDIOS DE METABOLISMO BÁSICO EN EL PERÚ. Tesis presentada para optar el grado de Doctor en la Facultad de Medicina de Lima. Por Alberto Hurtado. Paper. Pp. 72, with illustrations. Lima, 1928.

REPORT OF THE HEALTH DEPARTMENT OF THE PANAMA CANAL FOR THE CALENDAR YEAR 1926. Paper. Pp. 68. Washington, D. C.: Panama Canal, 1927.

Medicolegal

Action to Revoke License—Privileged Communications

(State v. Knight (Iowa), 216 N. W. R. 104)

The Supreme Court of Iowa, in affirming a decree that the license of the defendant to practice medicine and surgery in that state be revoked, says that the action was brought by the state on the relation of the county attorney of Boone County. The defendant contended that the county attorney had no right to commence the action. But the provisions of sections 2495-2498 of the Iowa code of 1924 contemplate and intend different methods of commencing such a proceeding. The state department of health may take the initiative and direct the attorney general to act, and it is made his duty to comply; but a fair interpretation of these sections does not preclude the state department of justice from acting in the premises on its own initiative. In brief, the direction from the department of health is not a condition precedent for the commencement of an action by the attorney general. The medical practice act of Iowa is predicated on the police power, and likewise are revocations and suspensions of licenses to practice medicine and surgery within the state. If the department of health obtains information concerning the transgression of a licensee, it may, on its own motion, take the preliminary steps, as provided by the statute, and cause an action to be instituted. It is not the legislative intent that, before a petition is filed to revoke the license of a practitioner, information must first be received by the department of health and authorization should be given, either to the attorney general or to the county attorney, for the commencement of such action.

The department of health has a duty enjoined by statute, to wit, to direct the attorney general, in the exercise of its discretion on information received, to file such petition. This is done on its own motion, or it may be done on the information of some person residing in the county wherein the licensee practices. This does not prohibit the initiation of the action by the attorney general or by the county attorney. The contrary thought is found in the statute. The legislature had in mind the safeguarding of life and health, and the agencies named in the statute are but different methods to obtain the results contemplated by the statute. Direct methods were intended, and not circumlocution in securing the end in view. In this particular the department of health, the attorney general, and the county attorney are protective agencies. The department of health is privileged to use the attorney general, but this is not exclusive. The statutory methods are concurrent, and the reason is apparent. The instant action was commenced by the county attorney, and properly so. It is not material that it might have been instituted by some other method.

This was an action in equity, and triable de novo (anew) in this court. The statute provides that in an action of this character the state shall be named as plaintiff and the licensee as defendant, and that the charges against the licensee shall be stated in full. Section 2499, code 1924. It is provided in section 2492 that a license to practice a profession shall be revoked or suspended when the licensee is guilty of "immoral, unprofessional, or dishonorable conduct." The instant petition charged the defendant with acts and conduct which were, in their nature, clearly unprofessional and dishonorable. It was alleged, among other things, that a death certificate was issued for the burial of the body of a certain woman, stating the cause of death to be double pneumonia, when in fact she died of septicemia following a criminal abortion. It was also alleged that on certain dates the defendant administered drugs to and used instruments in and on the bodies of certain named women with intent and for the purpose of producing miscarriages, the same not being necessary to save the lives of such women. It was not necessary that the state should establish, by satisfactory proof, all of the acts laid at the professional door of this defendant.

It was urged by the defendant that the court erred in permitting certain of the plaintiff's witnesses, on whom it was alleged abortive practices were used, to testify, over

his objection, as to matters which exposed them to public disgrace and ignominy. These witnesses had previously given their testimony before the grand jury, and thereby waived the right, if any existed, to refuse to testify. The privilege in question was for the witnesses to exercise, not the counsel for the defendant.

Nor did the court err in admitting the testimony of the physicians, respectively, who attended certain of the women subsequently to the alleged abortions. These women had previously appeared before the grand jury, and had made public, to that extent, their relations with the defendant. The privilege existing between physician and patient may be waived by the patient. It was done in this case. The defendant was in no position to invoke the prohibition of the statute under the instant circumstances. Neither was it error to permit another physician, who treated another woman on whom it was alleged abortive practices were used by the defendant, to testify as to his diagnosis and the history of the case which he learned from the patient, inasmuch as at the time of the diagnosis witnesses were present. It is true that under the invoked statute what is learned by a physician is a sealed book. But whenever a communication is made in the presence of a third person it is not a privileged communication within the purview of the statute.

Outlawed Counterclaim to Action by Physician

(Fish v. Conley (N. Y.), 225 N. Y. Supp. 27)

The Supreme Court of New York, appellate division, third department, says that the plaintiff brought this action to recover the value of medical services rendered by him to the defendant between March 1, 1924, and Feb. 17, 1925, alleging the reasonable value of such services to have been $303, of which only $25 had been paid. The defendant, in the third counterclaim of her answer, alleged malpractice by the plaintiff in the performance of such services, and claimed damages against him of $2,000 for such alleged malpractice. The plaintiff made a motion to dismiss the counterclaim on the ground that it was barred by the statute of limitations. The motion was denied, but the order denying the motion is reversed, and the motion granted.

An action for malpractice is required to be commenced within two years after the cause of action accrued (section 50 of New York civil practice act). The defendant therefore could not maintain an action for the malpractice which she alleged in her counterclaim. Section 61 of the civil practice act provides that:

> A cause of action other than for the recovery of real property, upon which an action cannot be maintained as prescribed in this article, cannot be effectually interposed as a defense or counterclaim.

Notwithstanding this unequivocal language, the defendant, although admitting that she could not maintain an independent action for the malpractice, contended that, when the counterclaim consisted of a "cause of action arising out of the contract or transaction, set forth in the complaint as the foundation of the plaintiff's claim, or connected with the subject of the action," as provided in subdivision 1 of section 266 of the civil practice act, such counterclaim might be interposed to the cause of action alleged by the plaintiff. Furthermore, it was argued that section 61 gave the plaintiff an unfair advantage, because it enabled him to prosecute his cause of action, although a counterclaim in favor of the defendant arising out of said cause of action was barred by the statute, and that said section 61 should therefore be limited to counterclaims provided for in subdivision 2 of section 266. But section 61 presented its own answer to that contention. Its phraseology could not be more comprehensive. It not only outlaws a counterclaim but also a "defense." A cause of action barred by the statute of limitations cannot be interposed as a defense or counterclaim. The language of section 61 is sweeping, and the intent thereof seems fairly to have been to outlaw all defenses or counterclaims, pleaded as such, which could not be the subject of an affirmative action.

However, in the case under consideration the defendant, under the denials of her answer, might prove the malpractice she alleged in answer to the allegation of the plaintiff as to the reasonable value of his services.

Society Proceedings

COMING MEETINGS

American Medical Association, Minneapolis, June 11-15. Dr. Olin West, 535 North Dearborn Street, Chicago, Secretary.

American Association for the Study of Allergy, Minneapolis, June 11-12. Dr. A. H. Rowe, 242 Moss Avenue, Oakland, Calif., Secretary.

American Association for the Study of Goiter, Denver, June 18-20. Dr. K. W. Kinard, Bryant Building, Kansas City, Mo., Secretary.

American Association of Industrial Physicians and Surgeons, Rochester-Minneapolis, June 11-12. Dr. V. S. Cheney, 5446 S. Halsted Street, Chicago, Acting Secretary.

American Federation of Organizations for the Hard of Hearing, St. Louis, June 18-22. Miss Betty C. Wright, 1601, 35th Street, N. W., Washington, D. C., Secretary.

American Heart Association, Minneapolis, June 12. Dr. Haven Emerson, 370 Seventh Avenue, New York, Secretary.

American Physiotherapy Association, Minneapolis, June 11-12. Miss I. M. Hazenhyer, 2900 Mildred Avenue, Chicago, Secretary.

American Proctologic Society, Rochester-Minneapolis, June 9-12. Dr. W. A. Fansler, 531 LaSalle Building, Minneapolis, Secretary.

American Psychiatric Association, Minneapolis, June 4-8. Dr. Earl D. Bond, 4401 Market Street, Philadelphia, Secretary.

American Psychopathological Association, Minneapolis, June 8. Dr. M. W. Peck, 520 Commonwealth Avenue, Boston, Secretary.

American Radium Society, Minneapolis, June 8-9. Dr. G. Grier, Jenkins Arcade Building, Pittsburgh, Secretary.

American Society of Clinical Pathologists, Minneapolis, June 8-11. Dr. W. T. Burdick, Republic Building, Denver, Secretary.

American Therapeutic Society, Minneapolis, June 9-11. Dr. W. J. Mallory, 1720 Connecticut Avenue, N. W., Washington, D. C., Secretary.

American Urological Association, Chicago, June 7-9. Dr. Alexander Randall, Medical Arts Building, Philadelphia, Secretary.

Associated Anesthetists of the United States and Canada, Minneapolis, June 11-12. Dr. F. H. McMechan, Avon Lake, Ohio, Secretary.

Association for the Study of Internal Secretions, Minneapolis, June 12. Dr. F. M. Pottenger, Title Insurance Building, Los Angeles, Secretary.

Association of American Teachers of the Diseases of Children, Minneapolis, June 12. Dr. Paul W. Emerson, 86 Bay State Road, Boston, Secretary.

Boston Trudeau Society, Boston, June 4. Dr. Randall Clifford, 475 Commonwealth Avenue, Boston, Secretary.

Conference of State and Provincial Health Authorities, St. Paul, June 8-9. Dr. A. J. Chesley, State Department of Health, St. Paul, Secretary.

International Anesthesia Research Society, Minneapolis, June 11-12. Dr. F. H. McMechan, Avon Lake, Ohio, Secretary.

Maine Medical Association, Belgrade Lakes, June 18-20. Dr. B. L. Bryant, 265 Hammond Street, Bangor, Secretary.

Massachusetts Medical Society, Worcester, June 5-6. Dr. Walter L. Burrage, 182 Walnut Street, Brookline, Secretary.

Medical Women's National Association, Minneapolis, June 11-12. Dr. Helen L. Palliser, 251 Church Street, Poughkeepsie, N. Y., Secretary.

Minnesota State Medical Association, Minneapolis, June 18. Dr. E. A. Meyerding, 11 West Summit Avenue, St. Paul, Secretary.

National Tuberculosis Association, Portland, Ore., June 18-20. Dr. C. J. Hatfield, Henry Phipps Institute, Philadelphia, Secretary.

New Jersey, Medical Society of, Atlantic City, June 6-9. Dr. J. B. Morrison, 66 Milford Avenue, Newark, Secretary.

Pacific Northwest Medical Association, Tacoma, Washington, July 5-7. Dr. Frederick Epplen, 511 Olive Street, Seattle, Secretary.

Rhode Island Medical Society, Providence, June 7. Dr. J. W. Leech, 369 Broad Street, Providence, Secretary.

Utah State Medical Association, Ogden, June 29-30. Dr. M. M. Critchlow, Boston Building, Salt Lake City, Secretary.

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS

Fourteenth Triennial Session, held at Washington, D. C., May 1 and 2, 1928

The President, DR. THEOBALD B. SMITH, Princeton, N. J., presiding

The Decline of Infectious Diseases and Its Relation to Modern Medicine

DR. THEOBALD B. SMITH, Princeton, N. J.: The subject of infectious diseases does not play the part on the medical stage that it did a generation ago. The pathology of the individual (rather than of the mass) holds the interest by means of such subjects as genetics, endocrinology, nutrition and hypersensitiveness, rather than by the older phase of communicable diseases. Yet the latter are still with us and an expensive machinery of community, state and nation is still in force to cope with them. In the early days, infectious disease was looked on as a contest between host and infectious agent. The question then arose whether the tissues of presumably normal human and animal bodies were sterile, and improvement in technic has shown that spores of anaerobes may remain in the system without multiplying. The most important subject in the domain of pathology has been the attempt to protect the human body against the inroads of bacteria. Genetics teaches that we cannot alter the original dower of capacities received from ancestors,

but medicine may aid enormously in augmenting these powers by adequate stimuli and calling forth latent protective energies. Immunity seems to vary in races and individuals. Fundamental metabolic processes probably control the situation. The term "acquired immunity" is misleading. Men and animals have a fundamental resistance, if the amount of virus is not excessive. Acquired immunity is simply strengthening this original resistance, usually by increase in antibodies.

Another important concept is the variability of microorganisms, the variations probably being induced in the human and animal body. Epidemics probably depend on modifications of virus within the human or animal system. Understanding of these factors has turned the medical mind to the prevention rather than the cure of infection. A product of preventive medicine has been the enormous development of research laboratories. The laboratory is more precise than clinical observation, but more limited, and should be used only to furnish corroborative evidence. Decline of infectious disease therefore means suppression of new forms, as well as blocking return of the old. Populations gradually build up resistance to a strange disease. They also suffer most when exposed by migration to strange disease. In epidemics that sweep rapidly over large areas, the causal organisms come from a strange environment. The population into which they are launched gradually acquire resistance.

A gradual decline in the mortality in infectious disease may be granted without statistical proof. Civilization maintains an increasingly dense population with a falling death rate, in spite of free intercourse. Without medical science civilization could not accomplish this, nor could human life be maintained. Medical science must continue its evolution with that of human society and maintain the barriers against environmental enemies until the population of the whole world has been brought to an antiparasitic level. Medical practice is the study of the individual, but medical science is the study of the race, and science must focus on the disease process rather than relieve the individual.

SYMPOSIUM ON HEART DISEASE

Economic Aspects of Heart Disease

DR. HAVEN EMERSON, New York: Disability from heart disease falls heavily on the unskilled workers' class, especially in cases of early death. Heart disease is especially fatal to the poorer classes, as patients are not in a position to observe precautions. There is a high death rate from heart disease in all ill paid and disadvantageous employments. Estimates of the cost of heart disease in the United States can be calculated as losses due to premature death, cost of medical and nursing care in hospitals, etc. On a calculated population of 120,000,000, July 1, 1928, with estimated deaths of heart disease 222,552, distributed by age groups, and charging for the numbers occurring at each decade the value of a life at the middle period of the decade, the cost in terms of money value is $1,502,208,355, or $12.57 per capita. Estimating that patients with heart disease require twice as many days of hospital care as average patients, the total cost of hospitalization to the community is $29,973,800. Figures for hospitalization of patients with heart disease differ in city and country. Taking all beds in general hospitals in the United States, there are at all times 6.58 heart patients, or 2,257,670 days of hospital care in a year. As regards New York City, the cost of care for each patient with heart disease is $257.27 in high grade hospitals with liberal use of beds, and in New York State $77 to $112, per heart patient. In state and city, 7.4 per cent of care is given to heart patients in general hospitals, and 3.6 per cent of care in private hospitals. The cost of visiting nurses or of more or less skilled attendance to these patients would add $289,160 to the burden of heart disease.

In New York City, one fourth of the population gets its ambulatory sick care at dispensaries. Heart clinics treat the majority of ambulatory heart patients. We have 3,024,901 visits a year. Dispensary visits cost one dollar, and others $2 or more; this gives a cost of $758,725 for dispensary care and $4,552,350 private, or $5,311,075 for the whole country. The convalescent care (six weeks or more) of patients with heart disease for hospital patients is 374,376 weeks ($2 a day), or $5,245,464. In addition the chronically ill (costing half the acutely ill) but not cared for in hospitals probably cost the country $77,732,000. The total is $1,606,728,234, or $13.38 per capita; or, on a basis of 2 per cent of the population having heart disease, or 2,400,000 heart patients, a cost of $669.47 for each patient yearly.

The Heart in Infection

DR. HOMER F. SWIFT, New York: The results of any infection on the heart depends on at least two factors: (1) the nature of the infection and (2) the reaction of the heart to that particular infection. The heart being a complex organ, it in turn shows different effects as one or another of its component parts is implicated. In diphtheria the toxin induces a degeneration of the muscle fibers and conduction system, which is soon followed by interstitial response and proliferation of the connective tissue elements. In scarlet fever, various types of cardiac injury are seen: toxic allergic and septicopyemic. The purely toxic symptoms occur shortly after the initial defervescence and are rarely, if ever, fatal; they are probably due to a direct action of the so-called *Streptococcus scarlatinae* toxin on the heart muscle. The allergic manifestations occur later, from the end of the third week on. In syphilis, most of the tissue reactions have been demonstrated to be allergic in nature; and the difference in the early and late lesions is probably to be accounted for by a more intense allergy which develops with the passage of years. The cardiac manifestations of syphilis usually do not appear until fifteen or twenty years after the chancre; this is probably due in part to the slowly progressing muscle injury. Involvement of the blood vessels of the heart probably also plays a prominent rôle in the syphilitic heart. In septicopyemia the injury to the whole body from the general bacteremic state usually determines a fatal outcome, so that the primary cardiac injury of this disease is relatively unimportant. From a theoretical point of view the various cardiac lesions in infection may be classified as follows: (1) toxic, as in diphtheria and early in scarlet fever; (2) allergic or hypersensitive, as late in scarlet fever, in rheumatic fever and in syphilis; (3) bacteremic and immune, as in subacute bacterial endocarditis; (4) bacteremic, toxic and cachectic, as in acute septicopyemia.

Effect of Strain on the Heart

DR. PAUL D. WHITE, Boston: Effects of strain must be considered with regard not only to the normal but also to the diseased heart. Strain may be of varying kinds, of varying degree, and the degree of strength and reserve power of the heart itself may vary. Also various kinds and degrees of strain may act simultaneously on the same heart. Direct effects of strain on the heart vary with the condition of the organ, a slight strain on a diseased heart often causing more result than a severe strain on a sound heart. Chronic strain may be taken care of by the cardiac reserve; if not, the myocardium must increase its strength as regards both bulk and capillary circulation. Strain increased beyond a certain point causes the organ to fail. A strain on both ventricles may be indicated by congestion of lungs, liver and neck veins, dependent edema, and finally general anasarca, orthopnea and cyanosis. If the strain is unilateral failure may be in one ventricle only, for a while, until a reaction is produced in the other ventricle. Heart strain may be intrinsic or extrinsic. Cardiac strain is a complicated situation and needs care in analysis. On the whole, however, the heart is an extraordinarily powerful organ, resisting strains of all kinds with great ability.

Treatment of Heart Disease

DR. JAMES B. HERRICK, Chicago: My plea is for greater care as to how we examine; how we tell our patients; how we prescribe rest and digitalis; how we individualize. We cannot mechanically dose this treatment by a slide rule. Observation, physical examination, laboratory tests and instruments of precision must all be given a place in the treatment of heart disease. Even psychology has its function. It may be objected that a practitioner should have knowledge and common sense, to which I must reply that some of us have knowledge but are not very wise; some of us see and know but do not think logically; some of us have experience but have not learned.

DISCUSSION

DR. E. P. CARTER, Baltimore: It is difficult for us who have thought in the traditional fashion, particularly with regard to rheumatic infection, to dissociate ourselves from preconceived ideas and accept readily an entirely new conception. This conception seems to suggest some striking paradoxes. I find it difficult to correlate the clinical picture of the course of the actual infection with the cardiac response. There is an extraordinary dissimilarity of reaction found in the tissues in such clinically different infections as rheumatic disease and subacute bacterial endocarditis. We are having marshaled with extraordinary precision here the evidence for a comparison between two great infections, tuberculosis and syphilis, and similarly the analogy to rheumatic infections.

DR. A. E. COHEN, New York: Twenty-five years ago, heart disease was spoken of as having been due to rheumatic fever, scarlet fever, syphilis, lead and tobacco poisoning and many other conditions, without any effort having been made to discriminate between the forms of natural history of the disease. Not only has Dr. Swift advanced the theory of the immune reaction, but he has shown that different agents are causing these diseases and also that the pathologic anatomy is quite distinct in each of the separate diseases. Therefore there are differences in all three of these conditions. There is also a variation in therapeutics. In 1900 a simple chapter was written, but now on the basis of differences in mechanism the studies on therapy have to move forward at the same rate as those on etiology and natural history. This is an important step forward, yet it seems to me that one point of importance has been missed. It is a matter of common knowledge that of those who die, one sixth die before the age of 40, and five sixths die after that age. Is syphilis alone responsible for this disproportion in the data? Prevention plays an important rôle in the whole picture.

DR. G. CANBY ROBINSON, Nashville, Tenn.: The heart is being strained by many things all the time and we become aware of the strain when the heart fails to respond to strain in the normal way. The heart is primarily engaged in the distribution of the blood, but after all it is primarily concerned in the distribution of oxygen to every cell of the body from the atmosphere in which we live. The heart undergoes many strains and many forms of injury and the remarkable thing is that the heart has the ability to maintain the accurate balance that is necessary for respiration and circulation. In studying the heart in heart failure and decompensation we must think of the heart not only as an organ but also in relation to other great physiologic activities that are going on in the body.

DR. S. A. LEVINE, Boston: Has Dr. Herrick direct evidence that work improves the heart? I know that work improves the sense of well being. Playing golf makes things pleasanter and makes us happier, but analyzed purely from the point of view of the heart I am not sure that work improves the heart. I am inclined to the opposite opinion. I feel that work aggravates patients with heart failure. If they have heart disease, rest in bed improves the circulation, probably by reestablishing the balance between the two sides of the heart. Exercise does not improve the breathing capacity of the lungs. In the case of long distance runners, men in the pink of physical condition, the vital capacity is sometimes below and sometimes above normal. We have felt that if exercise improves the breathing ability, which is the best index, these fellows should have an unusually large vital capacity, but they have not. In heart patients the vital capacity is diminished as they fail and rises as they tend to improve. There is some indirect evidence that exercise does not improve the ability to breathe. Runners run better because their legs are better. They cannot run farther because their legs will not run faster. The conception that rheumatic fever is more common than is recognized has been stressed. It might be regarded in the same light as infantile paralysis, in which the number of cases infected must be larger than the number that have paralysis. There are many cases in children who have an unexplained fever but no pains at all. The fever lasts weeks, months or years. In the family history it may be found that a sister has heart disease, or a brother has chorea or epistaxis. There may be cases of fever and slight systolic murmur, but no other symptoms. Is there anything in the allergic element in a patient which differs according to whether the heart is going to be involved or not? Certainly some cases escape cardiac involvement but are not altogether passed over, and some day they may end up with a bacterial endocarditis. Also in many cases of injured heart muscle of valves, we do get a history of bona fide rheumatic fever, yet these children may be future candidates for bacterial endocarditis. Is there anything in Dr. Swift's experience that will inform him which patients are likely to get rheumatic fever and which will not?

DR. LOUIS FAUGERES BISHOP, New York: This question of exercise and rest is vital to the whole matter of heart disease. I am much impressed by my own experience as to the importance of exercise by that group of people of middle age who feel some precordial discomfort on exercise and who therefore come to consult a specialist. If you take the whole group of middle-aged men who are showing signs of beginning degeneration of the heart and divide them into two groups, arbitrarily, putting one half of them into a group and encourage them to play golf and walk outdoors, give them glyceryl trinitrate and make them keep up moderate but regular exercise, then tell the other group to be careful, tell them they must rest and become lazy invalids, my experience shows me that the first group will still be enjoying a good game of golf when the other group are playing star parts in a first class funeral.

DR. HENRY SEWALL, Denver: A general practitioner cannot come to the treatment of heart disease with better experience than the treatment of tuberculosis. I think we shall all agree that for that treatment we must have perception of the activity of the disease. We may use a highfalutin modern term and say the patients are allergic. Exercise is deadly when the disease is in an active state. As recovery progresses, a graduated scale of exercise can be instituted. The heart lives on the coronary circulation and gets its maximal benefit from this result. The muscle is strongest when it is longest, and weakest when it is shortest. The heart gets its fullest nutrition at the full extent of its muscular power. Such a heart is not allergic. Heart infection must be a question of allergy, but how do you explain it when a man has a history of past disturbances but there is no sign of heart trouble? He gets tonsillitis and then you hear a murmur at the apex. That is not regurgitation, for with a few weeks' rest the murmur disappears, and the man passes life insurance examinations. Later he may get another attack and the murmur reappears. Finally, the man develops a bacteremia.

DR. HOMER F. SWIFT, New York: I recognize that a considerable amount of this work is based on analogy. We cannot present all the evidence. There is evidence that this response is allergic in nature. The antigen brings forth an allergic response in the tissues. If the antigen is put into the blood stream, it brings forth focal reactions. The change from allergy to the immune system looks like desensitization, but it is really immunization. One man has asked, Where is the focus in the patient? It is often in the tonsils, but it may be in the paranasal sinuses. There may be many foci in the individual, but whether a focus is in the myocardium primarily we cannot say at the present time.

DR. JAMES B. HERRICK, Chicago: I do not differ from Dr. Levine in his treatment of the patient with the failing heart. I would prescribe as much rest as he would, and perhaps more.

(To be continued)

Paying to Keep Well.—The physician's income depended—and to a large extent still depends—on the number of visits he made during the year to those who were actually sick. This system is a hardship to the family, who at the time of illness can least afford the expense of the physician's services. When preventive medicine was unknown, this system of paying the physician only when his services were needed was really the only basis on which to judge of his worth. In the future, the public is going to think more and more of how to live and how to keep well, and will more willingly pay physicians for advice on these subjects than they have in the past for treating their illnesses.—Emerson, G. S.: *New England J. Med.* **198**:90 (March 1) 1928.

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

American J. Medical Sciences, Philadelphia

175: 453-580 (April) 1928

*Hypertension Heart. G. Fahr, Minneapolis.—p. 453.
*Ten-Year Diabetic: What He is: What He Should Be: How to Make Him So. E. P. Joslin, Boston.—p. 472.
Border Zone Between Hyperplastic and Neoplastic Processes of Cutaneous Epithelium. F. D. Weidman, Philadelphia.—p. 479.
Excision of Prostatic Bar by Cutting Current. C. W. Collings, New York.—p. 485.
Examination of Fluids for Tumor Cells: Analysis of 113 Cases Checked Against Subsequent Examination of Tissue. A. P. Zemansky, Jr., New York.—p. 489.
*Carcinoma of Cervix of Long Duration and with Distant Metastases. J. L. Goforth, Dallas, Texas, and P. O. Snoke, Philadelphia.—p. 504.
Some Unusual and Atypical Intrathoracic Conditions. L. Kessel and H. T. Hyman, New York.—p. 511.
Morbid Processes Active in Pernicious Anemia. E. B. Krumbhaar, Philadelphia.—p. 523.
Diagnosis of Sporadic Infectious Mononucleosis (Glandular Fever). L. D. Cady, St. Louis.—p. 527.

Hypertension Heart.—Fahr asserts that approximately 140,000 persons in the United States die each year from the consequences of high blood pressure. Approximately one half of these deaths are due to cardiac failure consequent on high blood pressure. The hypertensive cardiac condition is frequently incorrectly diagnosed as myocarditis or mitral insufficiency. The diagnosis "arteriosclerotic heart" is also inappropriate unless coronary arteriosclerosis is present. The hypertensive heart is characterized by an increase in weight, largely due to hypertrophy of the muscle fibers of the left ventricle. In addition, there is a characteristic dilatation of the left ventricle in later stages. The treatment should be directed toward lowering the blood pressure so far as this is possible, and toward reducing the physical activities of the patient, thus reducing the work of the exhausted heart muscle. Digitalis, diuretics and sedatives have the same indications as other forms of heart disease with failure. Long continued bedrest is probably the most effective measure in handling this type of heart failure. Venesection helps in emergencies in which the venous pressure has risen above 20 cm. of water.

Blood Cholesterol in Diabetes.—Joslin believes that until it is proved that the cholesterol in the blood of diabetic persons is low, it is wise to give few rather than many eggs, and when a diabetic person shows signs of arteriosclerosis he should be restricted to one egg. Apart from eggs, the quantity of cholesterol in foods is comparatively low; that in vegetables is so low as to be entirely negligible; that in bacon, while higher, is also too low to be considered important. Olive oil sometimes contains as high as 1 per cent cholesterol and corn oil, about 2 per cent. The two latter are worth noting, because of their use as salad oils. Cholesterol is essential, and is to be found in practically every cell of the body. The egg question should be investigated. Eggs produce growth in infancy. Are they desirable for the old? Have centenarians used many eggs? What is the cholesterol content of the blood of groups of individuals who have had the egg habit, of races who do or do not eat eggs? Are eggs fed to prisoners or to the insane, and with what effect on the cholesterol concentration and arteriosclerosis?

Carcinoma of Cervix of Long Duration.—A case of epidermoid carcinoma of the cervix in which the patient lived more than eight years after eradication of the primary lesion by the combined radium and surgical method, finally dying from distant metastasis, is reported by Goforth and Snoke. At the necropsy many metastases were found throughout the lungs, liver and kidneys but there was not a local recurrence.

American Review of Tuberculosis, Baltimore

17: 307-433 (April) 1928

Errors of Omission and Commission in Diagnosis of Pulmonary Tuberculosis. E. N. Chapman, Mt. McGregor, N. Y.—p. 307.
Roentgen-Ray and Clinical Diagnosis of Tuberculosis in Children. H. D. Chadwick, Westfield, Mass.—p. 318.
Râles in Diagnosis of Pulmonary Tuberculosis. F. H. Heise, Trudeau, N. Y.—p. 326.
Râles in Prognosis of Pulmonary Tuberculosis. F. H. Heise, Trudeau, N. Y.—p. 329.
Pathologic Study of Roentgen-Ray Shadows of Chronic Pulmonary Tuberculosis. P. H. Pierson, San Francisco.—p. 331.
*Artificial Pneumothorax at Loomis Sanatorium Over Fourteen Years. A. Peters, Loomis, N. Y.—p. 348.
*Light in Treatment of Tuberculosis. E. S. Bullock, Silver City, N. M. —p. 375.
Mental Attitude as Factor in Treatment of Tuberculosis. B. Peterson, Rochester, Minn.—p. 388.
Chemical Composition of Active Principle of Tuberculin: IX. Fractional Heat Coagulation of Protein of Tuberculin. F. B. Seibert, Chicago. —p. 394.
Id.: X. Isolation in Crystalline Form and Identification of Active Principle of Tuberculin. F. B. Seibert, Chicago.—p. 402.
Cultivation of Tubercle Bacilli Within Diffusion Membranes in Vitro and in Vivo. P. C. Hou, Chicago.—p. 422.
*Cholesterol Content of Sputum. R. G. Kelly and M. Pinner, Northville, Mich.—p. 430.

Results of Artificial Pneumothorax.—A series of 273 patients (275 cases) subjected to therapeutic pneumothorax are reported on by Peters with particular attention to the end-results, as determined up to July 1, 1925. Of all patients in whom any pneumothorax at all was induced, 42 per cent were living at the end of from two to fourteen years, and 24 per cent were reported in satisfactory condition. Of the group with satisfactory collapse, 61 per cent were living, and 45 per cent were reported in satisfactory condition. On the other hand, of those patients in whom pneumothorax was impossible, 23 per cent were living, and 15 per cent were reported in satisfactory condition. That is, the end-results in the pneumothorax group were nearly twice as good as when no pneumothorax was possible. Actually the "satisfactory collapse" group accounts for most of the difference: when a satisfactory collapse was obtained the chances of a satisfactory result exactly trebled. Patients with disease of a very chronic type showed the least striking results. Doubtless, for many of these and for patients of the "incompletely effective collapse" group, thoracoplasty should be preferred.

Light in Treatment of Tuberculosis.—It is a widely held opinion that sunlight is of little or no use in pulmonary tuberculosis, and this, from long experience, Bullock says he knows to be correct. But airbaths are of great importance, and the time will come when, in favorably located institutions at all times of the year, and in others less favorably situated part of the year, tuberculous patients will be stripped of clothing—all but a breachcloth as a concession to decency. Patients so exposed do not take cold easily, are not so dependent on artificial heat, appear better, feel better, eat better and, briefly, recover faster and more surely.

Cholesterol Content of Sputum.—The sputum of fifty-nine patients with active pulmonary tuberculosis and of ten patients with nontuberculous pulmonary lesions was examined by Kelly and Pinner for cholesterol. They found that with the increasing extent of the lesions and with advancing tissue destruction, the cholesterol content of the sputum increases. It would seem, too, that the expectoration from exudative processes has a tendency to contain more cholesterol than that from productive lesions. The maximal and minimal values, however, show that there exists a considerable amount of overlapping between the various groups, so that cholesterol determinations are not likely to afford reliable information in regard to the type of lesions and, thereby, to prognostication. Furthermore, no relation exists between the amount of tuberculous sputum and the cholesterol content, or between the bacillary content and the amount of cholesterol, or between the ratio, amount of sputum: dried weight of sputum, and the cholesterol.

Archives of Pathology, Chicago

5: 565-762 (April) 1928

*Primary Double Cancer B. M. Fried, Boston.—p. 565.
*Effect on Blood Pressure of Rabbit of Arteriosclerosis and Nephritis Caused by Uranium: Influence of Other Heavy Metals. R. Dominguez, Cleveland.—p. 577.
*Alcohol in Human Body. W. D. McNally and H. C. Embree, Chicago.—p. 607.
Differential Blood Count of Normal Guinea-Pig: Nature of Kurloff Body. S. P. Lucia and E. L. Lucia, San Francisco.—p. 616.
Primary Round Cell Sarcoma of Pericardium: Case. H. Hill, San Antonio, Texas.—p. 626.
New Indirect Method for Taking Blood Pressure in Animals. L. McGregor, Minneapolis.—p. 630.
Status Lymphaticus. D. Marine, New York.—p. 661.

Primary Double Carcinoma.—Three cases of primary double cancer are reported by Fried. One was a case of primary carcinoma of the tail and body of the pancreas with metastases to lungs and liver, and primary carcinoma of the prostate. The second was a case of epidermoid carcinoma of the cervix uteri and a colloid carcinoma of the anus, and the third was a case of primary double cancer of both breasts.

Studies on Blood Pressure, Arteriosclerosis and Nephritis.—Experiments made by Dominguez do not support the mechanical theory of arteriosclerosis. The results obtained agree with the idea of an intimate relationship between the vascular apparatus of the kidney and high blood pressure.

Alcohol in Human Body.—Their experience in analyzing cases of alcoholism leads McNally and Embree to conclude that when alcohol is taken into the body it is rapidly absorbed and passes to all fluids and tissues of the body in approximately equal amount, so that within an hour and a half it is practically all absorbed and an analysis of the blood, urine or tissue will give a fairly accurate measure of the alcohol present. The alcohol is usually eliminated from the body within twenty-four hours. The human body normally contains about 0.003 per cent of alcohol. A chemical analysis of fluids or tissue of the body showing alcohol to be present in excess of 0.01 per cent indicates that alcohol has been taken recently. If such an analysis is made from two to six hours after the alcohol has been taken and the result is multiplied by the body weight, it will give approximately the total quantity of alcohol taken. The presence of from 0.4 to 0.5 per cent of alcohol represents a condition of drunkenness, and for a man of average weight means that about 300 Gm. of alcohol has been taken. This amount would be present in about a pint of ordinary whisky. Twice this amount, or from 0.8 to 1 per cent, of alcohol in the body will cause death.

Archives of Physical Therapy, X-Ray, Radium, Omaha

9: 145-192 (April) 1928

Newer Physical Aids in Diagnosis and Treatment of Partial Deafness. A. R. Hollender and M. H. Cottle, Chicago.—p. 145.
So-Called Ionization Treatment of Chronic Suppurative Otitis Media: Its Clinical Aspects. H. L. Warwick, Fort Worth, Texas.—p. 152.
Skin Affections of External Ear. L. Savitt, Chicago.—p. 155.
Physical Therapy in Diseases of Ear. F. L. Wahrer, Marshalltown, Iowa.—p. 158.
Physical Aids as Adjunct in Treatment of Certain Eye, Ear, Nose and Throat Conditions. H. L. Brooks, Michigan City, Ind.—p. 167.
Scope and Limitation of Physical Therapy in Genito-Urinary Disease. C. K. Smith, Kansas City, Mo.—p. 172.
Rectal Diseases Treated by Physical Therapy. G. J. Ott, Boston.—p. 177.

Canadian Medical Association Journal, Montreal

18: 375-494 (April) 1928

Early Diagnosis of Pulmonary Tuberculosis. D. A. Stewart, Ninette, Man.—p. 375.
Aspects of Physiologic Hygiene. C. H. Best, Toronto.—p. 379.
Psychology in Medical Education. J. W. Bridges, Montreal.—p. 382.
Carcinoma of Rectum. F. A. C. Scrimger, Montreal.—p. 388.
Method of Preparation of Liver Extract Powder for Treatment of Pernicious Anemia. J. B. Collip, Edmonton South, Alta.—p. 392.
*Effects of Liver in Diet on Blood of Normal Persons. B. S. Cornell, Montreal.—p. 394.
*Production of New Tumor. W. B. Brebner, Toronto.—p. 397.
Exophthalmic Goiter Complicated with Toxic Adenoma Treated by Lead Ionization. J. Miller, P. M. Mcdonnell and A. F. G. Cadenhead, Kingston, Ont.—p. 400.
*Studies in Malignancy. H. MacKay, Winnipeg, Man.—p. 403.
Sacral Anesthesia. S. A. Wallace, Kamloops, Ont.—p. 406.
Home Treatment of Fractures of Bones of Leg. A. B. Illievitz, Montreal.—p. 412.
Fate of Foreign Bodies Swallowed by Children. D. E. S. Wishart, Toronto.—p. 415.
Case of Severe Chronic Nephritis Showing Remission of Albuminuric Retinitis. W. de M. Scriver, Montreal.—p. 418.
Case of Angina Pectoris with Terminal Uremia. D. G. Campbell, Montreal.—p. 421.
Coronary Thrombosis. C. C. Birchard, Montreal.—p. 421.
Three Cases of Orbital Abscess Secondary to Suppurative Sinusitis. W. B. Stark, Rochester, Minn.—p. 423.
Periarterial Sympathectomy. G. Miller and M. Kaufman, Montreal.—p. 425.
Health and Housing. R. S. Macdonald, Montreal.—p. 438.

Effect of Liver on Blood of Normal Persons.—In order to determine the effects, if any, of liver consumption on the blood of normal persons, Cornell fed four healthy male adults half a pound of fresh calf's liver filtrate daily. The percentage of hemoglobin and the number of red cells remained constant. The numbers of the leukocytes of various types remained almost perfectly constant. The diameter measurements showed only insignificant changes, while the practical constancy of the volume index indicates that the cell volume was unaffected.

Production of New Tumor.—Brebner records the production of a new tumor in fowl by treating minced chicken embryo with an extract of rabbit placenta. The extract of placenta replaces the arsenic, tar and indol of Carrel, and the tumor extracts of Bisceglie, in stimulating embryonic cells into malignant proliferation. The tumor so produced is transplantable and highly malignant. The extraction of an unknown substance capable of producing malignant changes from such a normal tissue as placenta, which is comparable with malignant tissue metabolically, may provide a connecting link between the work of Gye and Murphy.

Sacral Anesthesia.—MacKay reports a case which illustrates that treatment by lead ionization appears to cause degenerative changes in the cells of a parenchymatous goiter, producing at the same time marked diminution in the size of the gland and improvement in the patient's health. The electrolyte used was lead nitrate. Treatments were given every three or four days. The average time of administration was from fifteen to twenty minutes, representing about 10 mg. of lead per treatment. Only a small fraction of the lead, however, actually entered the skin. A certain amount of burning of the skin was caused, owing to the setting free of nitric acid. After about eight treatments, a marked improvement in all the symptoms was noticed. The patient was able to swallow liquids and soft solids readily. Her breathing was easier and she felt a great deal better. The enlargement of the neck was scarcely noticeable except on close inspection. The exophthalmos continued and the heart was still rapid but flutter had disappeared. Six months later she was very much worse. Two further treatments with lead were given but without apparent result. In spite of active treatment, the patient rapidly became worse and died. A postmortem examination was carried out. A full report thereon is given.

Indiana State M. Association Journal, Fort Wayne

21: 137-184 (April) 1928

Acute Infections of Hand. S. L. Koch, Chicago.—p. 137.
Rhinology and Internal Medicine. C. P. Emerson, Indianapolis.—p. 145.
Ulcerated Colitis. A. G. Funkhauser, Indianapolis.—p. 150.
*Full-Term Extra-Uterine (Abdominal) Pregnancy. M. L. Wagner and J. P. Hahn, Peru.—p. 154.
Diphtheria Prevention Work. M. G. Smythe and O. B. Nesbit, Gary.—p. 155.

Full-Term Abdominal Pregnancy.—About two months after the probable beginning of a first pregnancy, the patient was taken suddenly ill with severe pain in the abdomen radiating into both flanks. The pain was so severe that she had to go to bed. This lasted for about three days, after which she was able to get up and sit in a chair, but a few days later the pain recurred and she was forced to go to bed again. From that time on she was never entirely free from this pain, which she could not localize any more definitely than by saying that it was in the lower abdomen and flanks. Later, examination conclusively confirmed the pregnancy, as the fetal heart tones were easily heard to the left and above the umbilicus. Wagner and Hahn saw her in the ninth month of the pregnancy and made a preoperative diagnosis of trans-

verse presentation. Cesarean section was advised. Immediately on the opening of the peritoneum a large dark, vascular mass presented itself. This proved to be the body of the child lying beneath the omentum and transversely in the abdomen with the head to the left. The overlying omentum was very thin, and as it extended downward it merged gradually into the vascular mass, which was the placenta. The baby was removed through the opening, and the cord clamped and severed. The placenta was then removed, which proved to be a tedious and difficult procedure, so intimately was it associated with the omentum, transverse colon and mesocolon. Almost all of the omentum had been invaded by the placenta, and with the removal of this only a very small portion remained. There was a dense mass of adhesions found connecting the left tube and ovary and the placenta. On the other side, a tremendous hematoma was found burrowing down from the placenta into the mesentery of the cecum and ascending colon and extending posteriorly to the parietal peritoneum beneath these structures. The uterus was normal in size and position, as were also the right tube and ovary. The baby weighed 7 pounds 10 ounces (3.4 Kg.).

Journal of Infectious Diseases, Chicago

42: 263-434 (April) 1928

Twort-D'Herelle Phenomenon: Critical Review and Presentation of New Conception (Homogamic Theory) of Bacteriophage Action. P. Hadley, Ann Arbor, Mich.—p. 263.

Journal of Nervous & Mental Disease, Albany, N. Y.

67: 321-432 (April) 1928

*Epilepsy. J. Notkin, New York.—p. 321.
Pathology of Conditioned Reflexes and So-Called Psychogenic Depression. A. G. Ivanov-Smolensky, Leningrad, Russia.—p. 346.
*Staphylococcus Septicemia with Diffuse Involvement of Nervous System. E. F. Wahl, Thomasville, Ga.—p. 351.
Psychoses in Criminals: Clinical Studies in Psychopathology of Crime. B. Karpman, Washington, D. C.—p. 355. (To be cont'd.)

Heredity in Epilepsy.—Forty female epileptic patients residing in a state institution have been analyzed by Notkin. A positive heredity was found in twenty-one cases, and a similar heredity in six cases; a history of mental and nervous disease and mental deficiency in the ascendants and collaterals was present in 20 per cent of the whole number and 38 per cent of the number with known heredity. Thirteen patients gave a history of direct ancestral alcoholism; i. e., 32.5 per cent of the total number of cases and 48.1 per cent of the number with known heredity. The frequency was slightly higher on the paternal side. In only one case may intemperance be considered as perhaps a part of the symptom complex of epilepsy. In four other cases, however, alcohol would seem to have been a precipitating factor. Five patients, or 12 per cent, gave a definite history of injury to the head previous to the onset of convulsive seizures, and none of them have ever shown signs of jacksonian epilepsy. One patient had acute articular rheumatism shortly before the onset of epilepsy, another had chorea, and a third had "dropsy," probably a rheumatic condition. Of the forty patients, thirteen were Irish; nine, Jewish; seven, of mixed race; four, German, and four Slavonic. The French, Italian and English races were represented by one patient. Twenty-nine patients had the first epileptic seizure before the age of 20, five between 20 and 30, and three between 30 and 34. In the cases in which the convulsive seizure appeared after 30, there was an alcoholic history. Only in five cases did the first menstrual period occur in the same year with the first convulsive seizure. Of the forty patients, twenty-one were menstruating regularly and five irregularly, and fourteen were at the menopause when this study was made.

Staphylococcus Septicemia.—A case of staphylococcus septicemia is reported by Wahl in which there was secondary involvement of the spinal cord, brain and meninges. There was nothing in the history to suggest an attack of epidemic encephalitis before or accompanying the staphylococcus infection. The spastic smile, the emotional instability, the waxy rigidity of the arms, the tremor of the head, arms and tongue, and the purposeless movements of the arms and hands are evidence of localized involvement of the basal ganglions.

Kansas Medical Society Journal, Topeka

28: 109-142 (April) 1928

Minute Circulation of Cerebrospinal Substance. J. T. Scott, St. John.—p. 109.
Surgical Disease of Biliary Tract. H. C. Embry, Great Bend.—p. 113.
Nonpenetrating Wounds of Abdomen. J. R. Campbell, Pratt.—p. 117.
Care of Aged. J. F. Brewer, Minneapolis.—p. 119.
Malpractice. J. D. M. Hamilton, Topeka—p 122
Finger Prints as Addition to Laboratory Work. L. C. Hill, Emporia.—p. 126.

Laryngoscope, St. Louis

38: 143-218 (March) 1928

Headaches: From Standpoint of Ophthalmologist. J. Green, St. Louis.—p. 143.
Id.: Their Neurosurgical Aspect. R. M. Klemme, St. Louis.—p. 149.
Id.: From Standpoint of Gynecologist G. Gellhorn, St. Louis.—p. 155.
Id.: And Neuralgias of Nasal Origin. A. M. Alden, St. Louis.—p. 160.
Id.: D. W. Drury, Boston.—p. 165.
Some Mooted Points in Sound Conduction and Perception During Course of Chronic Progressive Deafness. F. P. Emerson, Boston.—p. 185.
Nasal Reconstruction by Means of Autografts and Isografts. M. Metzenbaum, Cleveland.—p. 197.
Open Safety Pin Remaining Stationary in Thoracic Esophagus of Baby After Fifty Miles of Rough Transportation. F. T. Hill, Waterville, Me.—p. 206.
Finger Holder for Laryngoscopic Mirror. M. J. Mandelbaum, New York.—p. 208.
Combined Frontal Sinus Dilator and Cannula. W. Spielberg, New York.—p. 210.

Military Surgeon, Washington, D. C.

62: 433-571 (April) 1928

Infectious Diseases: Where Did They Come from and Where Are They Going? M. A. Reasoner.—p. 433.
*Case of Appendicitis. L. W. Johnson.—p. 456.
Venereal Disease in Canal Zone. W. N. Bispham.—p. 460.
Fracture of Pelvis with Rupture of Urinary Bladder: Case. A. W. Williams.—p. 472.
Field Service. J. W. Grissinger.—p. 475. (C'td.)
The Old, Old, Very Old Man. J. D. Edgar.—p. 499.

Unusual Case of Appendicitis.—In Johnson's case there was a severe chill with a temperature of 106.4 F.; the attack followed an acute enteritis, and leukopenia and rash were present. The signs on which a diagnosis of appendicitis is usually based were absent. The visceral and the parietal peritoneum were dry, granular and dark red, and covered with petechial spots. The appendix was large and black. The lumen was blocked by a fecalith near its base, and the portion distal to this was distended with fluid. There were no adhesions and no plastic exudates. In fact, all the defensive processes seemed entirely absent. The appendix was removed. The patient was in very poor condition after the operation and required supportive treatment. Antistreptococcus serum was given intravenously two hours after operation and again eighteen hours later. Forty-eight hours after operation the temperature was normal and the patient was eating a soft diet. Cultures from the lumen of the appendix and blood cultures showed the colon bacillus.

Minnesota Medicine, St. Paul

11: 203-278 (April) 1928

Protein Therapy in Ophthalmology. W. L. Benedict, Rochester.—p. 203.
What Price Luxury: Toll of Modern Housing. W. W. Lewis, St. Paul.—p. 206.
Contracture of Axilla from Burns: Three Cases. H. T. Jones, Rochester.—p. 210.
Diagnosis and Treatment of Maxillary Empyema. W. H. Howard, Minneapolis.—p. 215.
Early Diagnosis of Intussusception in Children. W. R. Shannon, St. Paul.—p. 221.
Congenital Pyloric Stenosis. R. N. Andrews, Mankato.—p. 227.
Eczema in Infants. W. B. Richards, St. Cloud.—p. 229.
Headaches from Neurologic Standpoint. G. R. Kamman, St. Paul.—p. 231.
*Blood Sugar and Irritability. E. M. Greisheimer, Minneapolis.—p. 239.
*Acute Poliomyelitis. S. W. Adler, Winona.—p. 245.
Osteomyelitis of Superior Maxilla in Infants: Two Cases. T. N. Fleming, St. Cloud.—p. 252.
Ovarian Cyst: Case. M. S. Sichel, Minneapolis.—p. 253.
Carcinomatous Cyst of Pancreas: Case. B. J. Gallagher, St. Cloud.—p. 254.

Blood Sugar and Irritability.—The probability that a fundamental relation exists between the blood sugar level and the irritability of the nervous system led Greisheimer to conduct experiments on dogs. The irritability of the reflex arcs of decerebrate dogs was found to increase as the blood

sugar decreased. This occurred whether the decrease occurred spontaneously or after the administration of insulin. It is believed that decerebration, as a rule, does not cause an increase in the irritability of the reflex arcs unless the blood sugar falls simultaneously. One dog proved an exception. The irritability of the reflex arcs did not disappear even when the rectal temperature rose to 43 C. Attempts to decrease the irritability by continuous injections of dextrose were unsuccessful.

Acute Poliomyelitis.—Adler reviews his experience with a small epidemic of acute poliomyelitis. As to epidemiology, he says: In nearly every case there was illness in other persons in the home or a history of contact with other sick persons. Frequently several cases occurred in close proximity in the same neighborhood, and occasionally what appeared to be a real problem resolved itself into a simple one when it was discovered that several of the patients had been to some family gathering or at a picnic where they had established contact a short time previous. It is interesting to note that after the families in the city had been urged, through extensive newspaper publicity, to keep their children at home, the cases were less numerous, and the interesting observation was made by the local health officer that no case of frank paralysis was reported as the result of contact with patients in whom the disease had been recognized and placarded.

Missouri State M. Association Journal, St. Louis

25: 137-184 (April) 1928

Intestinal Obstruction in Infants. M. B. Clopton, St. Louis.—p. 137.
Tularemia: Two Cases. M. G. Gorin, St. Louis.—p. 141.
Epidemic Encephalitis. J. F. McFadden, St. Louis.—p. 144.
Rectal Fissure. W. R. Rainey, St. Louis.—p. 148.
Crippling Varicose Vein. W. F. Grinstead, Cairo, Ill.—p. 151.
Present Status of Thyroid Surgery. W. Smith, Springfield.—p. 154.
Medical Corps of Navy as Career for Young Physicians. G. F. Cooper, Washington, D. C.—p. 155.

Nebraska State Medical Journal, Norfolk

13: 121-160 (April) 1928

Diagnosis and Treatment of Trigeminal Neuralgia Major. W. T. Coughlin, St. Louis.—p. 121.
Diagnosis of Incipient Pulmonary Tuberculosis. H. A. Bray, Ray Brook, N. Y.—p. 125.
*Epidemic of Acute Anterior Poliomyelitis in Omaha in 1925. B. C. Russum and T. L. Houlton, Omaha.—p. 127.
Gallbladder Surgery. A. I. McKinnon, Lincoln.—p. 134.
Health Examinations. L. W. Rork, Hastings.—p. 135.
Blood Transfusions. F. W. Niehaus, Omaha.—p. 138.
Actinomycosis of Jaw. W. N. Nelson, Hardy.—p. 142.
Functions of Diaphragm and Intercostal Muscles and Their Clinical Significance. R. R. Best, Lincoln.—p. 143.

Pathology of Acute Anterior Poliomyelitis.—The pathologic changes in the central nervous system in the five patients examined by Russum and Houlton were quite severe and extensive. All five had paralysis of the intercostal muscles, and with the possible exception of one, in whom only a limited postmortem examination was permitted, there was extensive pathologic involvement of the anterior horn cells of the thoracic portion of the spinal cord. Although the pathologic changes were rather general throughout the central nervous system, they corresponded in severity with the clinical symptoms in each case.

New England Journal of Medicine, Boston

198: 379-426 (April 12) 1928

Ideals in Treatment of Diabetes and Methods for Their Realization. E. P. Joslin, Boston.—p. 379.
Primary Adenocarcinoma of Duodenum: Twelve Proved Cases. J. W. Dewis and G. W. Morse, Boston.—p. 383.
Fracture of Carpal Scaphoid: Use of Bone Graft. J. D. Adams and R. D. Leonard, Boston.—p. 401.

198: 427-476 (April 19) 1928

Etiology and Treatment of Pyelitis in Pregnancy. J. I. Hofbauer, Baltimore.—p. 427.
Present Status of Treatment of Genital Tuberculosis in Male. J. D. Barney, Boston.—p. 442.
*Spinal Anesthesia. B. Rapoport, Boston.—p. 447.
Progress in Thoracic Surgery for 1927. E. D. Churchill, Boston.—p. 453.

Results of Spinal Anesthesia.—In 500 cases in which spinal anesthesia was used, Rapoport has had twenty-six failures (5.2 per cent). Of that number, eleven occurred in the first hundred cases; seven in the second hundred; four in the third hundred; and only two each in the fourth and fifth hundreds. This proves the value of experience and improved technic. There were sixteen cases of incomplete anesthesia, in which the use of gas-oxygen had to be resorted to during part of the operation. Rapoport uses procaine tablet C (procaine, 0.05 Gm.; epinephrine, 0.000083 Gm.), and as an average dose for a patient who weighs 150 pounds (68 Kg.), one and a half tablets dissolved in from 5 to 6 cc. of saline solution. The weight of the patient, his state of mind, the extensiveness of the operation, the length of time required and the anatomic location of the operation must be considered.

New Orleans Medical and Surgical Journal

80: 605-684 (April) 1928

Rise of Medicine. M. G. Seelig, St. Louis.—p. 605.
Surgical Correction of Squint. A. L. Whitmire, New Orleans.—p 618.
*Treatment of Spastic Paralysis: Stoffel Operation. H. T. Simon, New Orleans.—p. 622.
Kielland Forceps. E. L. King, New Orleans.—p. 627.
Conservative Gynecology. W. D. Phillips, New Orleans.—p. 630.
Hemorrhagic Complications of Later Months of Pregnancy. C. J. Miller, New Orleans.—p. 637.
Influence of Hospitalization on Mentally Ill. M. S. Freiman, Jackson, La.—p. 642.
*Treatment of High Blood Pressure. A. Henriques, New Orleans.—p. 647.
Treatment of Malunions of Femur. M. Bradburn, New Orleans.—p. 650.
Caudal Anesthesia in Urology. F. J. Chalaron, New Orleans.—p. 655.

Treatment of Spastic Paralysis; Stoffel Operation.—Simon has operated according to the Stoffel technic on twelve patients, doing a total of forty-three operations, three being on the median nerve, twelve on the obturators, fourteen on the sciatics, and fourteen on the internal popliteals. With the exception of the three median nerve operations improvement was most marked; in the patients walking with a bad gait the improvement was immeasurable, and the three patients who were practically bedridden were enabled to walk with a considerable degree of satisfaction. Of the patients in whom the median nerve operations were performed, one improved markedly and when seen six months afterward had excellent usage of his hand; the other two, while no longer showing the marked wrist and finger contraction, had not established useful finger motion.

Radium Treatment of High Blood Pressure.—Henriques' method of treatment consists in the application of radium to the basal ganglions of the brain. Fifty milligrams of radium, screened by 2 mm. of brass, was applied for periods ranging from one-half to two hours, at a distance of 1 inch from the skin. The point of application was just above and in front of the external auditory meatus. The effects are attributed to the action on the vasomotor system and the general metabolism. The following effects have been observed: (1) reduction in systolic and diastolic pressures and also in pulse pressure; (2) relief of symptoms, varying from improvement to complete disappearance; (3) a reduction in the size of the enlarged heart and even of the aorta, as shown in roentgenograms taken at a distance of 6 feet. The effects are gradual. When the immediate effects of 209 treatments, varying from one-half to two hours, with fifty periods of rest in the same posture were compared and for the same length of time, there was no appreciable difference.

New York State J. Medicine, New York

28: 365-423 (April 1)1928

*Cancer Death-Rate Variations in Relation to Combustion Products of Fuel, Topography and Population. J. Meyers, New York.—p. 365.
Theories of Hypnosis and Its Use. S. Rothenberg, New York.—p. 372.
*Value of Functional Test in Diagnosis of Diabetes. J. Ferber, I. Apperman and S. Rabinowitsch, New York.—p. 378.

Relation of Full Combustion to Cancer.—This study by Meyers of the relationship of fuel and topography to cancer incidence and mortality on Staten Island over a seven year period shows that there may be such a relation, open level districts of high or low altitude showing lower cancer rates than land in hollows or depressions, intersected by gullies or valleys, or lying against adjacent hills. Those sections of Staten Island exposed to smoke fumes and gases show a higher cancer death rate than those not so exposed. House

heating and chimney ventilation are also important, as gases and fumes from these sources may bear a relation to cancer incidence.

Value of Function Tests in Diabetes.—Cases are presented by Ferber et al. to show that a defect in the carbohydrate metabolism can be demonstrated in patients who do not show sugar in the urine, and who have a normal fasting blood sugar. Three of the patients reported have subsequently been shown to be definitely diabetic and therefore demonstrate the value of the functional test. The limitations of this test have been discussed. It is obvious that all patients showing a defective carbohydrate metabolism should have prophylactic treatment so as to be safeguarded against future emergencies.

Northwest Medicine, Seattle

27: 165-212 (April) 1928

Anatomy of Growth. T. W. Todd, Cleveland.—p. 165.
Nontraumatic Lesions of Diaphragm in Infancy and Childhood. H. C. Olmsted, Seattle.—p. 169.
Thymus Death in Child Showing Several Congenital Abnormalities. H. E. Coe, Seattle, and B. E. Peden, Chiloquin, Ore.—p. 177.
Thymus in Childhood. B. E. Bonar, Salt Lake City.—p. 178.
Hypertrophic Pyloric Stenosis Occurring in Premature Twins. J. B. Bilderback, Portland, Ore.—p. 182.
Goiter in New-Born Infant. P. W. Sweet, Centralia, Wash.—p. 183.
*Heart Disease in School Children. T. H. Coffen and H. A. Carey, Portland, Ore.—p. 184.
Management of Strabismus: Plea for Early Treatment of Convergent Type. W. C. Finnoff, Denver.—p. 187.
Tonsil Problem. C. W. Pond, Pocatello, Idaho.—p. 190.
Fistula in Ano. I. H. Moore, Seattle.—p. 194.
Epilepsy of Long Standing Cured by Symptomatic Treatment: Case. G. P. Winchell, Eugene, Ore.—p. 200.

Heart Disease in School Children.—Of more than 3,000 children examined by Coffen and Carey, 171 were refused permission to enter a track meet. Some of these were free from organic heart disease, but were excluded because of nutritional defects or poor exercise tolerance. One hundred and ninety-one of the 3,000 school children were found to have heart murmurs. In ninety-two of these the murmurs were not apparent until after exercise. Of the 191, fifteen were found in whom chronic rheumatic heart disease was a factor. A surprising observation was the frequency of murmurs at the base of the heart, particularly over the pulmonic valve area. These murmurs were usually systolic, possibly of little significance, because the children had good exercise tolerance and appeared to be healthy. There was normal tachycardia after exercise, or a rate a bit above the average but returning to normal in the usual time. Often this murmur was loud and rasping. It was usually confused with a mitral systolic or aortic systolic murmur, but in looking over the records it was often noted that after exercise the murmur was louder and was heard with equal intensity over the mitral and pulmonic areas, or was loudest at the pulmonic area or was heard well over the aortic area. That it was not due to aortic stenosis or to congenital defects is obvious.

Ohio State Medical Journal, Columbus

24: 249-336 (April) 1928

*Value of Blood Sedimentation Tests and Use of Brominized Oil as Diagnostic Aids in Gynecology. P. J. Reel, Columbus.—p. 269.
Pyelonephritis. I. H. Cutler, Louisville, Ky.—p. 274.
Otologic Nystagmus. S. S. Quittner, Cleveland.—p. 278.
Neurology of Nystagmus. S. Baumoel, Cleveland.—p. 283.
*Treatment of Epilepsy. J. Fetterman, Cleveland.—p. 287.
Transpleural Esophagocutaneous Fistula Following Suppuration. E. J. McCormick, Toledo.—p. 290.

Value of Blood Sedimentation Tests and Brominized Oil in Gynecologic Diagnosis.—Reel states that neither the sedimentation velocity test nor the use of brominized oil for the purposes of intra-uterine injection and roentgen-ray examination is to be advocated as an indispensable means of gynecologic diagnosis but rather to stimulate their employment as aids in arriving at a more accurate conclusion as to the nature and extent of the pathologic condition existing within the pelvis. The routine use of the sedimentation velocity test in all gynecologic cases will call attention in certain patients to the presence and degree of infection, not otherwise suspected. The injection of 40 per cent brominized sesame oil has proved to be of value in diagnosis, and in no way detrimental to the welfare of the patient.

Treatment of Epilepsy.—The first requisite in the treatment of epilepsy, Fetterman says, is general hygienic care plus the removal of the cause if this can be done. Sedative drugs, especially phenobarbital, have a great field of usefulness. Attempts to change the acid-base equilibrium artificially were tried. Potassium citrate made many worse; ammonium chloride was neutral. Fetterman found the high fat diet rather disappointing. Apnea and rigidity are proposed as worthy of trial to avert attacks.

Public Health Journal, Toronto

19: 151-200 (April) 1928

Future of Public Health. J. G. FitzGerald, Toronto.—p. 151.
Health and Housing. R. St. J. Macdonald, Montreal.—p. 156.
High Bacterial Counts in Pasteurized Milk. H. A. Harding and A. R. Ward, Detroit.—p. 162.
Convalescent Care. O. G. Cameron, Toronto.—p. 168.

Rhode Island Medical Journal, Providence

11: 53-70 (April) 1928

Avoidance of Risk in Operations. J. W. Keefe, Providence.—p. 53.
Shellfish Sanitation. L. M. Fisher, Washington, D. C.—p. 57.

South Carolina M. Association Journal, Greenville

24: 79-110 (April) 1928

Tularemia. S. O. Pruitt, Columbia.—p. 89.
Choice of Anesthetic: Regional Anesthesia. R. B. McKnight, Charlotte, N. C.—p. 90.

Southern Medical Journal, Birmingham, Ala.

21: 253-334 (April) 1928

Training Medical Students in Practice of Preventive Medicine. W. S. Leathers and A. E. Keller, Nashville, Tenn.—p. 253.
*Streptococcic Foci in Arthritis; Intestinal Tract. P. M. Keating, San Antonio, Texas.—p. 263.
Iridotasis for Glaucoma. J. Dupuy, New Orleans.—p. 267.
Gallbladder Disease. E. A. Graham, St. Louis.—p. 271.
*Internal Hydrocephalus Due to Congenital Syphilis. J. Yampolsky, Atlanta, Ga.—p. 274.
Pyelitis of Pregnancy: Three Cases. R. E. Van Duzen and J. W. Bourland, Dallas, Texas.—p. 275.
Bursitis and Periarthritis of Shoulder. J. E. Stewart, St. Louis.—p. 280.
Ectopic Pregnancy: 211 Cases. T. B. Sellers and J. T. Sanders, New Orleans.—p. 283.
Hip Joint Affections in Children. O. L. Miller, Charlotte, N. C.—p. 287.
Mediastinum as Factor in Thoracic Surgery. J. W. Snyder, Miami, Fla.—p. 293.
Giving Uterine Cancer Patient Best Chance to Survive. H. S. Crossen, St. Louis.—p. 300.
*Pemphigus Confined to Mucous Membranes. H. Hailey, Atlanta, Ga.—p. 308.
*Carcinoma of Rectum in Boy Nineteen Years of Age. L. W. Grove, Atlanta, Ga.—p. 309.
Three Cases of Leprosy in One Mexican Family. R. J. White, Fort Worth, Texas.—p. 311.
Vertigo Characteristics. M. A. Lischkoff, Pensacola, Fla.—p. 312.
Treatment of Incomplete Early Abortion. E. Novak, Baltimore.—p. 317.
Surgery in Compound Fractures. S. R. Benedict, Birmingham, Ala.—p. 322.
Visual Aphasia Complicating Thrombosis of Middle Cerebral Artery. V. K. Hart, Statesville, N. C.—p. 324.
Case of Sodoku. J. Watson, Anniston, Ala.—p. 325.

Intestinal Streptococcic Foci in Arthritis.—In more than ninety patients with undoubted chronic arthritis, Keating found the intestinal tract to be infected with streptococci of either the viridans or the hemolytic type. In approximately 100 other stool cultures in patients suffering from various disorders, he obtained about 10 per cent of positive cultures. In one case of unquestioned clinical gout cultures were taken from three specimens of stool and no streptococci were found. Keating suggests that the primary focus is in the throat or air passages, and that the intestinal tract becomes infected secondarily. If this secondary focus is present, the removal of infected tonsils and teeth will not result in a cure. An autogenous streptococcic vaccine by its specific action has proved of great value as an adjunct in the treatment of these cases.

Hydrocephalus Due to Congenital Syphilis.—A case of hydrocephalus due to congenital syphilis is reported by Yampolsky. The patient was given several intraperitoneal injections of neoarsphenamine and mercurosal, and the condition is at present apparently arrested.

Pemphigus of Mucous Membranes.—The three patients reported on by Hailey all complained of nervousness, weakness, loss of weight and painful sores or ulcers in the mouth. In one case there were also sores in the vagina. Each had gone through the various treatments for Vincent's angina; two had been treated for syphilis, and one had been treated for diphtheria.

Carcinoma of Rectum in Boy.—A case of carcinoma of the rectum in a youth, aged 19, is reported by Grove, bringing the total number of reported cases of carcinoma of the rectum and sigmoid in patients under 20 years of age to fifty-three. Notwithstanding the fact that the patient had been examined two months before admission to the hospital, an exact diagnosis was not made, because a protoscopic examination was not done. Two months later a correct diagnosis was easily made by the use of the proctoscope. This was confirmed by biopsy. The case was inoperable. A colostomy was done, but the patient died seventy days afterward.

United States Naval M. Bull., Washington, D. C.

26: 217-477 (April) 1928

Chemical Warfare and Naval Medical Officer. E. W. Brown.—p. 217.
Physiology of Respiration in Relationship to Problems of Naval Medicine. E. F. Du Bois.—p. 247. (C'td.)
Medical Aspects of Naval Aviation. F. Ceres.—p. 271.
Hookworm as New Health Problem in St. Croix. T. H. Hayes.—p. 281.
Dental Observations on Annual Physical Examination. L. C. Frost.—p. 292.
Pineal Shadow—Diagnostic Landmark. O. B. Spalding.—p. 302.
Dental Diagnosis. T. L. Sampsell.—p. 308.
*Rabies in Haiti. G. C. Thomas.—p. 315.
Malaria Survey at Port de Paix, Haiti. P. W. Wilson.—p. 320.
Emergency Hospital; U. S. Navy Medical Department Standard Hutment Type. A. B. Montgomery.—p. 323.
Surgical Case. W. H. Michael.—p. 328.
*Method for Complete Dilation of Cicatricial Stenosis of Esophagus. C. M. Shaar.—p. 333.
Tonsillectomy. W. S. Sargent.—p. 336.
Sodium Thiosulphate in Treatment of Syphilis. J. W. Kimbrough.—p. 344.
Acute Lymphoblastic Leukemia: Two Cases. R. C. Satterlee and F. W. Walker.—p. 349.
*Traumatic Rupture of Spleen. W. L. Irvine.—p. 353.
Acute Atrophy of Liver Associated with Intravenous Administration of Neoarsphenamine. R. M. Choisser and P. W. Wilson.—p. 354.
Tartar Emetic in Treatment of Chancroidal Ulcers of Penis. O. Davis.—p. 356.
*Tourniquet Splint for Fractures of Elbow. R. Spear.—p. 358.

Rabies in Haiti.—Thomas reports that rabies exists throughout the island of Haiti and Santo Domingo in a very virulent form. Three cases of death have been reported from Haiti during the last two years, and there were probably many more unreported cases, especially in the rural districts where the cause of death is usually difficult to determine. A census of the dogs in Haiti is almost an impossibility, but their number runs well into the tens of thousands. Practically every Haitian family owns at least one dog, and it is not uncommon to find as many as four and five belonging to one family. The white population is almost as bad in this respect as the natives. About a year ago the Haitian dog law, requiring every dog in the republic to be licensed, was passed. The law also stipulates that when a dog is licensed it shall be inoculated with antirabies (one inoculation) vaccine. On Sept. 1, 1927, about one year after the passage of the law, there were only about 400 dogs licensed in the district of Port au Prince. The National Public Health Service of Haiti maintains a dog-catching department which, since the passage of the law, has averaged about 300 dogs a month. The dogs after capture are held for a number of days and then killed in the following manner: The exhaust pipe from an automobile is connected to an air-tight box containing the animal. Death occurs in a very short time (carbon monoxide gas).

Dilation of Cicatricial Stenosis of Esophagus.—Shaar reports a case of esophageal obstruction resulting from swallowing a lye mixture. For dilation of the stricture he devised a special apparatus. A stomach tube was tied at its distal end so as to prevent the escape of the opaque liquid through that opening. A small fenestration was made in the stomach tube about 6 inches from the tied extremity. A condom, from which the blind end was removed, was telescoped over the stomach tube and tied with fine braided silk above and below the fenestration. The rubber funnel was removed from the stomach tube and replaced with a large metal syringe containing a barium sulphate solution. Through this arrangement gradual dilation of the condom could be made by slowly injecting the barium through the proximal end of the stomach tube. The condom was selected for this purpose as it was thought that such thin rubber would be less likely to rupture a stricture and yet would yield readily to dilation. Occasionally it was found necessary to use two condoms for additional strength. Full dilation of the cicatricial stenosis was accomplished. The injections were made under fluoroscopic control.

Traumatic Rupture of Spleen.—Irvine reports the case of a man who was kicked in the left side while playing football. He experienced pain during the night. The following morning he was transferred to the hospital. Examination showed signs of internal hemorrhage. About 10 a. m. the following day he turned over in bed and a few minutes later went into a condition of extreme shock. He was operated on at once. The abdomen contained a large amount of free blood and blood clots, the latter confined mostly to the upper left abdomen. The spleen was delivered, and a V-shaped rupture of the anterior border found. A splenectomy was done. Convalescence was uneventful, with the exception of tachycardia which appeared on slight exertion and persisted for about six weeks after operation.

Tourniquet Splint for Fracture of Elbow.—Three cases of fractured elbows, all in children, have been treated by Spear by means of what he terms the tourniquet splint. It is made by doubling the ordinary rubber tourniquet, passing it around the neck, and securing this loop with a piece of adhesive plaster so as to leave plenty of room for the neck and avoid any strangulation. One free end of the rubber tubing is passed behind the wrist joint and the other in front, and the two ends are secured by another small piece of adhesive plaster. The wrist is padded with cotton and a bandage, so as to avoid any pressure from the rubber tourniquet. The position of the arm can be changed slightly from time to time very easily. The advantages of this splint are its simplicity and the fact that a certain amount of motion is obtained in the joint at all times. This splint is much more comfortable than many other types of splints that are used for fractures at the elbow joint, and the results in the three cases mentioned in which this splint has been used here have been almost perfect.

U. S. Veterans' Bureau M. Bull., Washington, D. C.

4: 295-401 (April) 1928

*Intestinal Tuberculosis. A. Blumberg and C. P. Waller.—p. 295.
Value of Pneumothorax Therapy in Veterans' Hospitals. C. L. Moore.—p. 306.
*Study of Emotions in Psychotic Patients. H. L. Flowers.—p. 309.
Use of Tryparsamide in Neurosyphilis. D. C. Burkes.—p. 322.
Dangers of Tonsillectomy. J. M. Love.—p. 331.
*Actinomycosis: Two Cases. G. D. Brand.—p. 335.
Arthritides in Adult. J. Carling.—p. 343.
Fly Control. R. W. Browne.—p. 347.
Master Key of Psychiatric Social Worker. I. L. Morgan.—p. 348.
Fractures of Mandible. E. G. Nertney.—p. 360.
Abscess of Liver. J. D. Brooks.—p. 363.

Intestinal Tuberculosis.—In the opinion of Blumberg and Waller, the diagnosis of intestinal tuberculosis should not be made unless the patient has evidence of active tuberculosis elsewhere in the body. The diagnosis may be made only after a correlation of the objective and subjective signs and the symptoms, the exclusion of other possible conditions, and a consideration of the degree of the tuberculous activity of the patient and the period of his active extra-intestinal tuberculous disease. It is the physician's familiarity with the condition of the patient that assists him in the diagnosis of intestinal tuberculosis. No one clinical symptom or roentgenologic sign per se will enable the physician to arrive at a diagnosis of intestinal tuberculosis. It is perfectly proper to treat as a serious matter such a disease as intestinal tuberculosis, but it is believed that care should be exercised in informing the patient of the seriousness of the condition, particularly in the early stage of the disease, when appropriate treatment may result in an improvement of the symptom complex. The therapy is purely empiric and consists in

the alleviation of troublesome symptoms. Early surgical removal of small diseased areas of intestine may result in a cure. Medical treatment consists of appropriate medication as symptoms arise. Belladonna, opium, alkalis, laxatives or enemas of various kinds may be used. Dietetic care is of value in that it helps to correct certain dietetic errors and may have a favorable effect on certain phases of dyspepsia. The various diets employed in cases of fermentative dyspepsia or putrefactive dyspepsia may be used in appropriate cases. A diet lacking in roughage frequently is of great value. Ultraviolet radiation may be used. The beneficial effect on symptomatology is frequently so marked that this treatment is indicated in most cases. The authors have seen cases in which it did not have any beneficial effects.

Emotions of Psychotic Patients.—Flowers has tested 100 psychotic patients with the Pressey X-O test for investigating the emotions, form A. Psychotic patients require more time to complete their tests than do normal persons, apparently because they become distracted or give way to mind wandering. The associational ability of the psychotic patients studied did not show any marked qualitative change, though, as might be expected, there was a diminution in the number of words associated with the given list as compared with normal reactions. The emotional idiosyncrasy of psychotic persons is much greater than that of normal persons; or, to state it in another way, the "conflicts" of psychotic patients are apt to be more varied than those of normal persons and are definitely of a different quality than the conflicts of the latter. No relation was found to exist between the intelligence and the evidence of psychosis offered by the Pressey X-O test. As to the modal words selected in the various tests, the most important observations are, first, that words of sex interest were not as frequently selected by the psychotic as by the normal person, and, second, that words appealing to the egotistic, or, better, egocentric and to the hyperchrondriacal, were chosen more often by psychotic than by normal persons.

Furuncular and Intestinal Tuberculosis.—One of Brand's cases was of the cervicofacial type which manifested itself in the form of many "boils." In the second case, the patient apparently had an intestinal actinomycosis without symptoms. He suffered an accident causing a rupture of the intestines, and invasion of the deep lumbar tissues took place from the intestinal contents. Several pelvic abscesses developed. In the pus was found *Actinomyces*.

Virginia Medical Monthly, Richmond

55: 1-78 (April) 1928

Treatment of Prolapse of Uterus in Elderly Women. C. R. Robins, Richmond.—p. 1.
Uterine Cervix. R. L. Raiford, Franklin, Va.—p. 2.
Eroded Cervix. S. Leigh, Norfolk.—p. 5.
Treatment of Cervicitis and Endocervicitis by Intracervical Injections of Mercurochrome. F. Helvestine, Jr., and F. A. Farmer, Roanoke.—p. 7.
Treatment of Dyspepsia. D. M. Berkman, Rochester, Minn.—p. 13.
*Treatment of Whooping Cough with Smallpox Vaccine. K. D. Graves, Pearisburg.—p. 15.
Foreign Bodies in Air and Food Passages. E. G. Gill, Roanoke.—p. 17.
Single Incision for Operation for Abdominal Hernia, Appendectomy and Pelvic Disease. G. P. LaRoque, Richmond.—p. 18.
Bacillary Dysentery in Virginia: Cases. W. H. Higgins, Richmond.—p. 20.
Value of Histamine in Differentiation of True and False Gastric Anacidity. D. Davis and D. Vanderhoof, Richmond.—p. 23.
Significance of Dilated Pupil in Acute Brain Injuries. J. G. Lyerly, Richmond.—p. 26.
Drug Eruptions. R. W. Fowlkes, Richmond.—p. 28.
Hydrogen Ion Concentration of Intestinal Tract. W. R. Graham, Richmond.—p. 32.
Analysis of 100 Chest Cases. G. A. Ezekiel, Richmond.—p. 36.
Nephrosis. J. S. Davis, University.—p. 38.
Diagnosis of Cholecystitis. J. H. Smith, Richmond.—p. 40.
Team Work in Medicine. J. W. Preston, Roanoke.—p. 43.
Dermatitis Medicamentosa. C. B. Campbell, Washington, D. C.—p. 46.
John Leigh, M. D. J. L. Miller, Thomas, W. Va.—p. 49.
Surgical Principles in Treatment of Uterine Prolapse. L. D. Keyser, Roanoke.—p. 51.
Some Aspects of Infection of Urinary Tract. G. S. Silliman, Abingdon.—p. 54.

Treatment of Whooping Cough with Smallpox Vaccine.—Forty-eight previously unvaccinated children under 2 years of age who had whooping cough were treated by Graves with smallpox vaccine. Three children in the same family had been exposed to whooping cough and, in view of the fact that they all had a cough and a marked leukopenia with lymphocytosis, it was thought that they were in the catarrhal stage of the disease. All three secured a "take" but the cough was not relieved; it continued for about six weeks, finally terminating in an unmistakable attack of paroxysmal whooping cough. The remaining forty-five were vaccinated after the paroxysmal stage had set in. With the exception of one child who also had advanced pulmonary tuberculosis, which ran a typical course, they all ceased to "whoop" about the time that the vaccination reached the pustular stage. This occurred apparently regardless of the stage of the disease. The cough usually lasted from one to two weeks, gradually subsiding. In one family two children developed whooping cough about the same time. One child was vaccinated, while the other received injections of stock whooping cough vaccine twice a week. The child who was vaccinated did not "whoop" a single time after the vaccination reached the pustular stage; while the other one ran a typical, although somewhat prolonged, course of whooping cough. In order to determine whether the treatment was somewhat specific or simply the response of the body to a foreign protein, six children were given two injections each of sterile milk hypodermically at three day intervals without any benefit.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Journal of Obst. & Gynec. of Brit. Empire, Manchester

35: 1-232 (Spring) 1928

*Epidemic Encephalitis in Association with Pregnancy, Labor and Puerperium. F. Roques.—p. 1.
*Researches in Lactation. M. F. Lowenfeld and S. T. Widdows.—p. 114.
*Empyema in Child Three Days Old. G. H. Dodds.—p. 131.
Accidental Implantation of Endometrial Tissue. V. Bonney and H. S. Davidson.—p. 135.

Epidemic Encephalitis and Pregnancy.—The many problems which arise when a pregnant woman becomes infected with epidemic encephalitis are discussed in great detail by Roques. He reports twenty-one new cases and adds cases collected from the medical literature. Of these 201 cases, acute epidemic encephalitis complicated pregnancy in 171, while in the remainder pregnancy was complicated by chronic epidemic encephalitis. Every phase of the subject is analyzed. In conclusion, Roques says: Because parkinsonism not infrequently makes its first appearance with pregnancy and is, when already present, often aggravated by pregnancy, patients who recover from acute epidemic encephalitis should be advised not to allow themselves to become pregnant until after a lapse of four years from recovery. Similar advice should be tendered to those who are first seen with parkinsonian symptoms. If abdominal section is necessary in a mother with parkinsonism, sterilization should be practiced at the same time. The question of termining pregnancy is considered, and the conclusion reached that the best line to take in this group of cases is one which involves very careful observation of the patients throughout pregnancy with active interference at the slightest provocation. The fact that parkinsonian symptoms appear for the first time with pregnancy makes it advisable to induce labor in this group of cases. Women who become pregnant after an acute attack, but who, up to the time of being seen, have not exhibited parkinsonian manifestations, should be watched carefully throughout pregnancy and active treatment considered if any early signs of parkinsonism appear. The course of labor should be rendered as easy as possible by shortening the second stage by the use of forceps. Lower limb rigidity may interfere with its application. Because aggravation of the disease is of common occurrence after the confinement, the strain of lactation should be avoided and the children fed artificially.

Study of Lactation.—Investigations were directed by Lowenfeld and Widdows to discover the manner in which the milk appeared and lactation developed during the first fourteen days of the puerperium. The duration of the colostrum depends on a balance of factors between mother and infant, i. e., on the type

of development present and on the infant's vigor in sucking. Small quantities of early milk have a food value approximating that of larger quantities of mature milk. The percentages of sugar and protein vary slightly at the beginning and end of a feeding period, but the differences are without clinical significance. The time in the feeding period when the sample is taken and the method of extraction of the milk do not affect the percentage of calcium and ash in the milk resulting. The percentage of fat in milk is dependent inversely on the amount of fluid present in the breast at the time of extraction, and directly on the amount of pressure exerted on the areola. Morbid states of the breast appear to be correlated with disturbances in the sugar content of the milk. However, cases can occur in which there is profound modification of the sugar content without any corresponding morbid state in the mother or in the infant.

Empyema in Baby.—The child in Dodds' case was ill from birth, but during the first two days of life the symptoms were indefinite. On the third day, pneumonia was tentatively diagnosed from the movement of the alae nasi, the color of the lips, the expiratory grunt and the increased respiratory rate. Two puzzling features in the diagnosis were the comparatively slow respiration rate, 40 instead of 80, and the slightly raised temperature (from 100 to 101 F.) in place of the high temperature of from 102 to 104 F., usually found in cases of pneumonia. Dodds is of the opinion that the infection was an intranatal one. The factors in favor of this belief are that labor lasted for from twelve to eighteen hours, and that the membranes were ruptured for six hours before the delivery of the child.

Journal of Pathology and Bacteriology, London

31: 141-444 (April) 1928

Hydatid Fluid as Anaphylactic Antigen. C. H. Kellaway.—p. 141.
Cutaneous Spirochetosis Due to Treponema Cuniculi in British Rabbits. D. K. Adams, D. F. Cappell and J. A. W. McCluskie.—p. 157.
Case of Nervous Cretinism: Histologic Examination of Organs. E. C. Eaves and M. M. Croll.—p. 163.
*Hypercholesterolemic Splenomegaly. S. C. Dyke.—p. 173.
Practical Application of Direct Oxidase Reactions in Bacteriology. J. Gordon and J. W. McLeod.—p. 185.
*Causes and Sequences in Nephritis. J. Gray.—p. 191.
*Purpura Producing Substance in Pneumococcus and Heritable Susceptibility of Mice. W. Mair.—p. 215.
Relationship of Complement Fixation to Precipitation. N. E. Goldsworthy.—p. 220.
Precipitinogen Obtained from Cultures of B. Aertrycke Mutton (Salmonella Aertrycke). F. C. Happold.—p. 237.
Experimental Monocytosis: Effects of Dead Bacterium Monocytogenes and of Extracts of Lymphatic Glands. L. J. Witts.—p. 249.
*Two Products of Thyroid Activity. G. S. Wiiliamson, I. H. Pearse and H. M. Cunnington.—p. 255.
Experimental Metaplasia and Hyperplasia in Serosal Endothelium: Hyperplasia in Alveolar Epithelium of Lung of Rabbit. J. S. Young.—p. 265.
*Blood Changes Occurring During Course of Treatment of Malignant Disease by Lead. R. W. Brookfield.—p. 277.
*Etiology of Hepatolenticular Degeneration: Experimental Liver Cirrhosis: Poisoning with Manganese, Chloroform, Phenylhydrazine, Bile and Guanidine. E. W. Hurst and P. E. Hurst.—p. 303.
Selective Bactericidal Action. E. A. Cooper and J. Mason.—p. 343.
Pellagra-Like Lesions Associated with Deficiency of Vitamin B_2 in Rat. G. M. Findlay.—p. 353.
*Tumors of Mediastinum and Lung. T. Shennan.—p. 365.
Immunity Index Method of Testing Antigenic Values. A. T. Glenny and H. Waddington.—p. 403.
Spontaneous Agglutination of Bacteria. P. B. White.—p. 423.
Precipitation Test in Hydatid Infestation. N. E. Goldsworthy.—p. 435.
Cultivation of Gonococcus. A. Marshall.—p. 437.

Hypercholesterolemic Splenomegaly.—A case is described by Dyke of splenomegaly associated with generalized xanthoma, hypercholesterolemia and biliary hepatic cirrhosis. The hypercholesterolemia was dependent on the existence of a chronic interstitial pancreatitis. The splenomegaly was due to a hyperplasia of large mononuclear cells of reticulo-endothelial origin. Histologic methods failed to demonstrate cytoplasmic inclusions of fatty or lipoid material in the cytoplasm of these cells. In spite of this, the percentage of cholesterol in the spleen was greatly increased. It is concluded that the splenomegaly was due to the hypercholesterolemia. The relation of this type of splenomegaly to the Niemann and Schultze types is discussed.

Etiology of Nephritis.—Gray reviews cases and reports on animal experiments, the results of which yield much evidence in favor of a bacteriotoxic origin in acute nephritis, though it falls short of absolute proof. Clinical investigation and postmortem evidence agree in showing that some variety of streptococcus is the organism most commonly associated with acute nephritis. Bacterial multiplication in the kidneys is not a feature of nonsuppurative nephritis, except probably in acute interstitial nephritis. In the other varieties ("glomerular," "glomerulotubular" and "tubular"), the bacterial factor is provided by lysis of organisms trapped in the glomeruli with consequent release of endotoxin. Experimental nephritis produced by simple crystalloid chemical substances is always tubular with minimal dosage, and this distribution is explicable on the basis of the "modern" theory of renal function. Alleged "glomerular" crystalloid poisons are really primarily tubular in incidence. Toxins, being colloids, are not filtered through the healthy glomerular tuft and so are concentrated in the glomeruli by withdrawal of fluid in the filtrate. Hence, the nephritis produced by them is initially glomerular. The successive stages in acute nephritis are outlined according to a classification made by Gray.

Purpura Producing Substance in Pneumococcus.—Mair asserts that pneumococci contain a substance which causes purpuric hemorrhages in white mice, especially in animals selected by inbreeding.

Two Products of Thyroid Activity.—A survey of the facts presented by Williamson et al. shows that the morphologic contrast between secretion tissue and colloid tissue is fully maintained by biologic tests on the tadpole. Secretion tissue does not effect the metamorphosis of the tadpole while colloid tissue induces premature metamorphosis. This inactivity of tissue in the phase of secretion is not due to the absence of material from the alveoli, for analysis shows that secretion within the alveoli does not contain iodine and colloid does. Analysis of the whole tissue further tends to confirm this distinction, since in the small percentage (6 per cent) of secreting tissue containing iodine the iodine is biologically inactive. The biologically inactive secretion lacking in iodine cannot be the mother substance of the biologically active iodocolloid. It is difficult, therefore, to accept the suggestion that colloid is the result of the "secreting process" called "hyperplasia," or that it is formed by the inspissation of stored secretion. The "hyperplastic" tissue of the normal and pathologic gland is in fact not a hyperplasia but normal tissue engaged in a specific function. The thyroid gland contains or produces two substances: (1) secretion proper and (2) iodocolloid. There is therefore a dual function exhibited by the thyroid gland both in health and in disease.

Blood Changes Caused by Lead.—The effect on the blood of lead administered in colloidal form by intravenous injection in the treatment of malignant disease has been investigated by Brookfield, and the following observations are recorded: A considerable temporary degree of anemia is produced by the injections. This is due to peripheral destruction of red blood cells by the lead which exerts its maximum effect immediately after an injection, while it is still circulating in the blood stream. The tendency of the red count to return rapidly to normal is due to to an increased activity of the bone marrow, as shown by the large number of reticulated cells which appear soon after the commencement of the injections. The origin of stippled red cells has been investigated. By a large series of comparative counts, during the progress of treatment, these were found to be closely related to the reticulated cells and in such a manner as to justify the conclusion that stippled cells are young cells altered by a degenerative process. No change definitely attributable to lead has been found in the white cells. The effect of two different preparations of colloidal lead on the platelets has been studied. Injections of a suspensoid of metallic lead, lead hydroxide and lead carbonate were found to produce an immediate rise in the number of the circulating platelets, while a lead selenium compound produced an immediate fall. No definite cause could be assigned to these differing phenomena.

Etiology of Hepatolenticular Degeneration.—No evidence was obtained by the Hursts of any connection between liver cirrhosis and cerebral changes which might throw light on hepatolenticular degeneration.

Tumors of Mediastinum and Lung.—Of the thirty-one cases reported on by Shennan, only two were sarcomas; twenty-five were carcinomas, and four were thymomas.

Annales de l'Institut Pasteur, Paris

42: 225-348 (March) 1928

Constant, Low Virulence of Calmette-Guérin's Bacillus. A. Maximow. —p. 225.
*Report of Ukrainian Commission on New Experiments with B C G Antituberculosis Vaccine. Tzekhnovitzer.—p. 246.
Botryomycosis of Sheep. M. Aynaud.—p. 256.
Immunization of Cattle Against Bovine Piroplasmosis. W. L. Yakimoff. —p. 282.
Use of Active Serums in Serodiagnosis. H. Hecht.—p. 320.
Present Status of Cancer Problem. A. Borrel.—p. 333.
1928. Supplement: International Conference on Rabies.
Nature of Virus of Rabies. A. C. Marie.—p. 12.
Modifications of Pasteur's Method of Vaccination Against Rabies. A. C. Marie.—p. 36.
*Paralyses Occurring During Course of Antirabic Treatment. P. Remlinger.—p. 71.
Local Accidents Occurring During Course of Antirabic Treatment. P. Remlinger.—p. 133.
Antirabic Vaccination of Animals. H. Vallée.—p. 144.

New **Experiments with B C G Vaccine.**—The experiments performed by the Ukrainian commission are given in detail. The conclusions reached were as follows: (1) Calmette-Guérin bacilli injected in small or large doses into healthy or weakened guinea-pigs produce only localized lesions with a retrogressive tendency; even successive passages from one animal to another never result in progressive tuberculous processes; (2) Calmette-Guérin bacilli introduced into guinea-pigs which are thereafter subjected to repeated injections of tuberculin do not increase in virulence; (3) cultures of B C G isolated after one or two passages in the guinea-pig were not virulent; (4) the tissue culture method permits demonstration of the nonvirulence of B C G; (5) the vaccination of laboratory rodents with B C G gives relatively good results; (6) the vaccination of cattle with B C G confers a definite resistance to experimental intravenous injection of virulent tubercle bacilli; (7) the B C G eliminated in the milk of cows is completely avirulent; (8) studies made over a period of more than two years prove that the use of B C G for the preventive vaccination of new-born infants is harmless. The very low mortality from tuberculosis observed in vaccinated infants in an infected area is in favor of vaccination by Calmette-Guérin's method.

Paralyses Occurring During Course of Antirabic Treatment.—In 1905 Remlinger sent out his first questionnaires and found that paralyses developed in forty out of 107,712 persons given antirabic treatment. This survey was followed by others, on the basis of which the author concludes: one must evaluate at more than 500, but less than 1,000, the total number of paralyses observed since the first antirabic vaccinations. In the great majority of cases, the paralyses begin from the eleventh to the thirtieth day after the patient is bitten. This incubation period is, therefore, decidedly shorter than the incubation period of rabies. The frequency of the accidents varies greatly with the institute preparing the vaccine, in some of which they are totally unknown, regardless of method; whereas in others they are observed, likewise regardless of method. The accidents are less frequent with killed vaccines (phenol, ether) than with living ones. They are less frequent if the spinal cords are preserved a sufficient length of time in glycerin. On the other hand, the attenuations by desiccation and by dilution result in a higher number of paralyses. Although the pathogenesis of the paralyses still remains obscure, and although it is difficult to say just what does produce them, it is very certain that they are not the manifestations of an attenuated canine rabies and that they are not the result either of associated bacteria or of anaphylaxis. The accidents are produced by the injections themselves, but what it is in the injections that causes them is unknown. In the presence of paralytic accidents the injections should be interrupted, all active medication should be avoided, and the process should be allowed to follow its regular evolution toward healing.

Annales de Médecine, Paris

23: 193-300 (March) 1928

Primary Cancer of Lung with Necrosis, Cavity-Formation and Suppuration. Olmer, Rouslacroix and Poinso.—p. 193.
*Roentgen-Ray Treatment of Asthma and Spasmodic Coryza. Pasteur Vallery-Radot, P. Gibert, P. Blamoutier and F. Claude.—p. 214.
Antitoxic Immunity in Man. C. Zoeller.—p. 241.
Case of Periarteritis Nodosa Associated with Familial Neurofibromatosis. J. E. W. Brocher and E. Frommel.—p. 265.
*Use of Cabbage Juice Instead of Ewald-Boas Meal in Determining Secretory Function of Stomach. W. Orlowski.—p. 277.
Relation Between Disturbed Sulphur Metabolism and Chronic Deforming Arthritis. A. P. Cawadias.—p. 292.

Roentgen-Ray Treatment of Asthma and Spasmodic Coryza.—Vallery-Radot et al. studied the effects of the roentgen rays on sixty-four patients, thirty-one of whom had only asthma, eight only spasmodic coryza, and twenty-five a combination of the two diseases. In some the hilum of the lung was irradiated, in others the spleen, and in still others both the pulmonary hilum and the spleen. As a rule, both hilum and spleen were given from ten to twelve exposures, each lasting ten minutes. The results were: disappearance of the attacks of asthma and coryza in nineteen cases, or 30 per cent; amelioration in 16, or 25 per cent; no improvement in 29, or 45 per cent.

Use of Fresh Cabbage Juice in Determining Secretory Function of Stomach.—Instead of the Ewald-Boas test meal and the ordinary stomach tube, Orlowski uses 200 cc. of fresh undiluted cabbage juice and a tube only 2 mm. in diameter. The advantages of the small caliber tube are that it is easily swallowed, does not provoke vomiting movements, and may be left in place throughout the experiment. The advantages of the fresh cabbage juice are numerous. It can be swallowed by patients who have no appetite and in whom the psychic factors of digestion would be inactive with the Ewald-Boas meal. It contains no solid particles and can, therefore, be withdrawn easily and rapidly through the small caliber tube. The mixture of cabbage juice and gastric juice is homogeneous and easily filtered and substances in it, such as mucus, pus, and blood are readily recognized.

Archives des Maladies de l'App. Digestif, etc., Paris

18: 241-360 (March) 1928

Pneumogastrography. P. Duval, J. C. Roux and H. Béclère.—p. 241.
*Perforative Gastric Ulcer Resembling Neoplasm and Containing Vegetable Fiber Inclusions. R. Bensaude and A. Cain.—p. 252.
*Polyposis of the Stomach. M. Lamas.—p. 261.
Rôle of Hemolytic Factor in Production of Parenchymatous Icterus. A. Landau, M. Fejgin and J. Held.—p. 270.
Use of Synthalin in Treatment of Diabetes. J. Gavrila.—p. 293.

Perforative Gastric Ulcer Resembling Neoplasm and Containing Vegetable Fiber Inclusions.—In a stomach removed at operation, Bensaude and Cain found that the lesser curvature was occupied by a very hard mass, with ill-defined outlines. When the stomach was opened along the greater curvature, a true callous tumor was found occupying the entire lesser curvature up to the region of the pyloric canal. It projected into the lumen of the stomach and narrowed the antrum considerably and was covered by an exuberant mucosa which showed an ulcerative depression 2 cm. deep. Microscopically, the specimen presented the essential characteristics of callous and perforative ulcers and in addition some very unusual nodules. These nodules were scattered throughout the fibrous tissue with no particular arrangement, varied in size from microscopic to macroscopic, and, from their deep tint, were very noticeable in the white fibrous tissue. In these nodules, long, tubular filaments with a central empty or granular canal were present; some presented transverse, others oblique or longitudinal sections. These filaments contained neither protoplasm nor nuclei, gave the reactions for cellulose, and, from all appearances, were fibers of cotton. Their presence had produced various reactions in the connective tissue of the stroma, all of which, however, were characterized by an intense infiltration of lymphocytes, mononuclear eosinophils, and plasma cells.

Multiple Polyps of the Stomach.—Lamas operated on a case diagnosed roentgenologically as gastric ulcer. The exposed stomach at first appeared normal, but, on further palpation, a soft, somewhat mobile foreign body was felt within it. Anterior, horizontal gastrotomy was performed after the tumor had been fixed with two fingers. As soon as the stomach was opened, the tumor tore into several pieces, which had the aspect of nasal polyps. The incision was prolonged and it was found that the entire gastric wall was covered with vegetations resembling placental tissue. A small amount

of pus was found in some of the vegetations and from this pus pneumococci and staphylococci were cultured. Extirpation being impossible, material for a biopsy was removed and the stomach was closed. The histologic diagnosis was adenomatous polyposis of the stomach with a very marked proliferative process in which carcinomatous degeneration was probably beginning.

Lyon Médical, Lyons

141: 309-340 (March 18) 1928

*Compression of Spinal Cord by Aortic Aneurysm. Devic and Janin.—p. 309.

Compression of Spinal Cord by Aneurysm of Aorta.—Although aneurysm of the aorta frequently produces marked destruction of vertebrae, it very rarely causes compression of the spinal cord. Devic and Janin report a case of the latter condition in a woman, aged 54, in whom the first sign of aortic aneurysm was the sudden appearance of a spasmodic and very pronounced paraplegia. Radiologic examination of the spinal cord following suboccipital injection of lipiodol showed an arrest of the lipiodol at the level of the fourth thoracic vertebra. Laminectomy was performed and an elongated extradural mass compressing the spinal cord was found. Very careful attempts were made to ablate this mass but a pulsating zone was soon reached and the operation was stopped. A week later the patient died during an attack of dyspnea. Necropsy showed no blood in the spinal canal; the dura was intact and the spinal cord did not appear compressed. Nevertheless, a large aneurysm on the anterior surface of the spinal canal was found.

Paris Médical

67: 293-328 (April 7) 1928

Koenig's Syndrome in Incomplete Stenoses of Small Intestine. P. Carnot.—p. 309.
Intestinal Tuberculosis. L. Bonafé.—p. 316.
Radiologic Examination of Cecum from the Rear. P. Jacquet and J. Serrand.—p. 320.
*Duodenal Tubage in Vomiting of Pregnancy. Lévy-Solal and A. Hadgès.—p. 324.

Duodenal Tubage in Vomiting of Pregnancy.—In the treatment of eighteen cases of vomiting caused by lesions of the bile tract or duodenum and occurring in pregnancy, Lévy-Solal and Hadgès used duodenal tubage. Anesthetization of the pharynx was not required even in cases of almost continuous vomiting. They found duodenal tubage to be a rapid method for treating the vomiting of pregnancy associated with lesions of the duodenum and bile tract; it renders possible alimentation and represents the most efficient treatment of cholecystitis of pregnancy.

Presse Médicale, Paris

36: 401-416 (March 31) 1928

Radical Treatment of High Gastric Ulcer. V. Pauchet.—p. 401.
*Early Diagnosis of Intestinal Tuberculosis. L. Bonafé.—p. 404.

Early Diagnosis of Intestinal Tuberculosis in Cases of Chronic Pulmonary Tuberculosis.—Bonafé insists on three fundamental points: the frequency of intestinal tuberculosis, the possibility of its cure, and its relatively independent evolution in cases of chronic pulmonary tuberculosis. Intestinal tuberculosis may begin under any one of five clinical pictures: (1) latent début under a syndrome of unexplainable emaciation; (2) larval début under a syndrome of gastric dyspepsia which masks the intestinal localization; (3) début with abdominal pains, which may constitute the only initial manifestaton of an intestinal tuberculosis; (4) début by an intestinal hemorrhage comparable to hemoptysis at the beginning of pulmonary tuberculosis; (5) début by diarrheal phenomena, by far the most frequent type. The diarrhea may be caused by: (*a*) hyperkinesia of the intestine with premature evacuation of intestinal contents; (*b*) fermentation; (*c*) digestive insufficiency; (*d*) catarrhal enteritis due to a medicinal intoxication, an unreasonable suralimentation or the intestinal elimination of tuberculosis toxins. Two very important symptoms are: (1) loss of weight, which is much more important than the fever curve; (2) fever, which is occasionally absent and which is frequently very irregular. There are no certain laboratory tests: the search for the tubercle bacillus in the feces is of no value except in the complete absence of expectoration, and even then the results are open to discussion. The most valuable means of diagnosis is the systematic radiologic examination of the digestive tube, which permits a precise localization of the intestinal lesions.

36: 433-448 (April 7) 1928

*Venesection in Cyanosis. C. Aubertin, R. Lévy and P. Foulon.—p. 433.

Rapid Disappearance of Cyanosis, Tricuspid Murmur, and Edema in a "Black Cardiac" Following Profuse Internal Hemorrhage.—Although venesection almost always ameliorates certain functional disturbances in patients affected with cyanosis, regardless of whether its origin is cardiac or pulmonary, it rarely has any direct effect on the cyanosis itself. In a case of Ayerza's disease with cardiac decompensation accompanied by marked cyanosis, however, Aubertin et al. observed a rapid and complete disappearance of the cyanosis and the systolic tricuspid murmur coinciding with the appearance of bloody stools; during the next few days there occurred marked diminution in the dyspnea, disappearance of the edema, and increased diuresis. The patient died ten days later, however, from posthemorrhagic anemia. Autopsy revealed an enormous quantity of coagulated blood filling the stomach and most of the intestine.

36: 449-464 (April 11) 1928

Faulty Eruption of Wisdom Tooth. E. Pollosson and M. Dechaume.—p. 449.
*Diagnosis of Cancer of Cervix from Scrapings. A. Babès.—p. 451.
Use of Unmodified Blood in Transfusions. A. M. Dogliotti.—p. 454.

Diagnosis of Cancer of Cervix Uteri from Scrapings.—The author proposes, in the place of biopsy, a method of diagnosis of cancer of the cervix by means of histologic examination of material obtained by scraping with a platinum loop. Tissue thus obtained is fixed in methyl alcohol and stained with Giemsa stain. An increase in epithelial cells and in leukocytes was a prominent feature in the histologic preparations. The deciding characteristics, however, are found in the arrangement of epithelial cells and the modifications in the anatomic characteristics of the latter. Variation in the size of the nucleus and nucleolus, changes in the chromatin content of the nucleus, the polymorphism of the nucleus and particularly its giant size, are pathognomonic of cancer.

Archivio Italiano di Chirurgia, Bologna

20: 487-606 (Feb.) 1928

*Treatment of Pain Syndromes of Viscera. G. Pieri.—p. 487.
Restoration of Extensive Defects in Common Bile Duct. S. Latteri.—p. 541.
*Regeneration of Spleen in Dog. G. Amormino.—p. 559.
*Cancer of Breast. G. Villata.—p. 586.

Treatment of Pain Syndromes of the Viscera.—Pieri discusses the results secured in twenty-four interventions on the vegetative nervous system. The seat of the pain was as follows: stomach, three times; intestine, three; pancreas, one; biliary tract, three; kidney, four; testis, two; adnexa, one; bladder, two; uterus, five. Total denervation constitutes an excessive and unnecessary physiologic mutilation. Section of the rami communicantes is preferable. In ramisection for pain in the stomach, intervention on the right side will usually suffice. In the stomach the indications for ramisection lie particularly in the gastric crises of tabes, but only in the type characterized by colic pains. Of the renal pain symptoms, the most typical is "neuralgia," a clinical entity that presupposes the absence of anatomic changes, and therein ramisection is frankly indicated. "Neuralgia" of the testes is curable by ramisection. "Pelvic" neuralgia yields to the same treatment. In thirty-one ramisections, Pieri lost one patient from bronchopneumonia.

Regeneration of the Spleen in the Dog.—Amormino's experimental researches on the spleen of dogs led him to conclude that: the spleen forms again or regenerates at the point at which a wedge-shaped portion is removed. In addition to this regeneration in the spleen itself, two other phenomena were observed: neoformation of splenic tissue in the omentum, and foci of lymphoid tissue, as a sign of regeneration, in other organs (liver, kidney, testis).

Cancer of the Breast.—Villata thus sums up his conclusions from a study of clinical statistics: Neoplasms of the right breast are much more frequent than of the left. Ulcerative cancer of the breast gives a very high percentage of postoperative deaths. Cancer adherent to the skin produces recurrences at a short distance. The incidence is highest between the ages of 46 and 50. Patients should be examined roentgenologically before intervention, to avoid operating on those with beginning metastasis in the thoracic cavity. In the majority of cases recurrences develop in the operative cicatrix. The highest mortality occurs in the first and second years of the cancer; it declines 50 per cent in the third year and still more in later years. The proportion of patients who survive operation more than three years is 46.7 per cent; of those who survive five years, 27.4 per cent. Bone metastases are very susceptible to treatment by irradiation, which effects at least a retrogression of the tumor and assures the patient a long period of rest.

Clinica Chirurgica, Milan

31: 81-186 (Feb.) 1928

*Surgical Treatment of Traumatic Facial Paralysis. G. M. Antonioli. —p. 81.
Synergy of Alcohol and Lecithin with Ether in Surgical Anesthesia. M. Novi.—p. 105.
*Case of Bilateral Cancer of the Breast. P. Costantini.—p. 131.

Surgical Treatment of Traumatic Facial Paralysis.—In cases of complete peripheral paralyses, Antonioli affirms, nerve anastomosis still holds the first place among the many methods recommended. Many failures are due to the fact that the patients are not subjected to proper and sufficiently long postoperative treatment. Systematic faradic stimulation of the nerve and muscles and exercise of the muscles constitute the basis of postoperative treatment. The results are not immediate. It is difficult to foresee when active movements will begin to return. It may be in a few months, or not for several years. In one of Tilmann's cases it took five years.

Bilateral Cancer of the Breast.—Costantini gives the case history of a woman, aged 51, with synchronous bilateral cancer of the breast, the possibility of metastasis being absolutely excluded. The tumors were independent of each other and were of different histologic structure. The symptomatology was that usually described in cancer of the breast. Roentgen-ray treatment was tried, but had no effect. A surgeon was consulted when the tumor of the left breast had attained the size of a man's fist. This tumor was removed surgically, and the tumor of the right breast, the size of a walnut, was now first discovered, situated several centimeters below the skin. Ten months later this tumor was removed. The patient died five months later. The right tumor showed signs of recurrence, but the left tumor, which was operated on first, appeared to be permanently healed. The cicatrix presented a regular appearance and there were no unfavorable cutaneous or glandular manifestations.

Clinica Pediatrica, Rome

10: 65-128 (Feb.) 1928

Meningitis and Meningeal Reactions in Childhood. P. Fornara.—p. 65.
*Guanidine Bases in the Urine in Chorea. E. Fanton.—p. 76.
*Treatment of Idiopathic Vomiting in Infancy. M. Flamini.—p. 88.
*Blood Researches in Barlow's Disease and in Experimental Scurvy. G. Carbonara.—p. 98.

Guanidine Bases in the Urine of Children with Chorea or Other Diseases.—Fanton found guanidine bases in the urine of seven children with ordinary chorea and very small quantities in two children subject to convulsions of toxic origin, in two with symptomatic chorea, in a girl subject to tonico-clonic convulsions, in a child convalescent from a grave attack of appendicitis, and in an infant with tetany. This indicates that in chorea in children, and, in general, wherever there is a deficient parathyroid secretion, there is a modification of metabolism which causes the formation of intermediate products from the decomposition of protein substances. These findings confirm the theory of Maestro with regard to the etiology and pathogenesis of idiopathic chorea in children.

Idiopathic Vomiting in Infancy: Calcium Therapy, and the Curative Effects of Vitamin D.—On the basis of his experiments and observations, Flamini concludes that the antirachitic vitamin D, when administered subcutaneously to infants subject to essential vomiting, has evident curative effects, which are, in general, rapid and better than can be obtained with other medicaments.

Blood Researches in Barlow's Disease and in Experimental Scurvy.—Carbonara's researches revealed important hematologic changes in Barlow's disease, evidencing a gravely impaired condition of the hematopoietic organs. Such changes consist of (1) moderate decrease in the number of erythrocytes and marked diminution of the hemoglobin content; poikilocytosis and anisocytosis; sometimes, polychromatophilia and the presence of normoblasts, and (2) quantitative increase of leukocytes and qualitative increase of lymphocytes. A moderate shifting to the left in Arneth's formula was noted; also a slight diminution of viscosity; increase of coagulation time; frank increase in the fragility of the erythrocytes. In experimental scurvy, the blood changes were inconsiderable, consisting of (1) a slight polycythemia at the beginning and at the end of the disease, broken by a brief period of decrease of erythrocytes; an increase or decrease of the hemoglobin content parallel with the changes in the corpuscles; almost no morphologic changes in the erythrocytes, and (2) a final leukopenia, without alterations of the leukocyte formula, with only a slight shifting to the left.

Gazzetta degli Ospedali e delle Cliniche, Milan

49: 253-284 (March 4) 1928

*Angina Pectoris. R. Gaeta.—p. 253.
Poisoning from Fungi. F. Castellani.—p. 255.

Angina Pectoris.—Gaeta thinks that, as we cannot admit that angina pectoris is of purely neurotic origin, we must assume the preexistence of a lesion of the coronary arteries, slight, but such as to give rise to manifestations of angina pectoris. There are two diseases that damage the arteries and particularly the aorta: in juveniles syphilis, and in adults arteriosclerosis. Arteriosclerosis itself, when it develops early, is frequently of syphilitic origin. We must therefore always suspect syphilis in all juvenile types of angina pectoris. In instituting treatment, these two causes of the disease must be considered; the patient must avoid all forms of stimulation (smoking, alcoholic beverages, emotional excitement, overfatigue, dietetic disorders). To forestall the attacks, the nitrites and theobromine are indicated. If medical treatment fails and the attacks become so frequent as to produce a status anginosis, surgical intervention (interruption of the sympathetic paths), after the method of T. Jonnesco, is justified.

Pediatria, Naples

36: 225-280 (March 1) 1928

Autohemotherapy in Keratoconjunctivitis. A. De Capite.—p. 225.
*Pfeiffer's Bacillus in Endemic Influenza. A. Signa.—p. 237.
Isohemo-Agglutination with Relation to Mother and Son. A. Berardi. —p. 250.

Pfeiffer's Bacillus in Endemic Influenza.—Signa reports that from the throats of children with endemic influenza the Pfeiffer bacillus can frequently be isolated. Hence, it is possible that this micro-organism is the etiologic agent of the disease, in which case it has the same causal agent as pandemic influenza, which we must continue to associate with Pfeiffer's hemophilic bacillus. In case the Pfeiffer bacillus should prove to be the etiologic agent of endemic influenza, the different diffusion of the two diseases (the pandemic type and the endemic type) and the different relative gravity must be explained on the basis of the varying virulence of the micro-organism in question and on the assumption that it is capable of notably changing its nature.

Policlinico, Rome

35: 109-164 (March 1) 1928. Medical Section

*Hemolytic Anemia with Constant Hemosiderinuria. E. Marchiafava.—p. 109.
Examination of Liver Function. P. M. Re.—p. 121.
Uremic, Diabetic and Hepatic Coma. C. Cipriani.—p. 142.

Hemolytic Anemia with Constant Hemosiderinuria.—Marchiafava reports two peculiar cases of hemolytic anemia characterized more particularly by hemosiderinuria. In one case,

the number of erythrocytes was reduced by half a millon. The patient complained of tiring easily, and at times of painful rigidity in the legs, which disappeared on resting. He suffered from palpitation and from dyspnea following exertion. Digestion was impaired and sleep was broken. In periods of the greatest hemolysis, the urine was dark colored, and the symptoms recorded were exacerbated. He suffered from a general feeling of discomfort. The etiology was unknown. In November, 1927, liver therapy was begun, from 150 to 200 Gm. of lightly cooked liver being given daily. The treatment was continued for two months and was well tolerated, but was without manifest benefit.

Riforma Medica, Naples

44: 241-270 (March 5) 1928

*Symmetric Gangrene of the Extremities Associated with Typhoid. C. Imperiale.—p. 242.
*Sudden Postoperative Deaths. E. Santoro.—p. 244.
A Variant of the Wassermann Test. E. Mariotti.—p. 246.

Symmetric Gangrene of the Extremities Associated with Typhoid.—Imperiale reports a case of typhoid in which gangrene of both lower limbs developed. The right thigh was amputated at the middle third, and the left leg was amputated at the upper third. The postoperative course was normal.

Sudden Postoperative Deaths. — Santoro gives four case reports of patients who died suddenly and unexpectedly within short periods after operation. The ages of the patients were 65, 68, 40 and 66, respectively. With regard to these four cases, the author raises three queries: 1. Must sudden death always be attributed to an embolus? 2. In cases of embolism, is the embolus always carried from the field of operation? 3. What are the predisposing and determining causes effecting the detachment of the embolus from the thrombosed vein? The author is in accord with Cantelmo that, in general, in the absence of other clinical data pointing to different factors, the major presumption as to the cause of death is embolism. But there are numerous other causes of sudden, unexpected postoperative death. Even though an examination—often superficial—has revealed no important changes in the cardiovascular apparatus, have we a secure foundation for exclusion of cardiac paralysis or cerebral hemorrhage? Death may be sudden in persons with arteriosclerosis. As to the second query, it is not likely that in case 2 an embolus became detached from a vein of the operative region thirty-eight days after an operation with a normal course and after massage and movement had been given for several days previously. The author is inclined to assume an embolism in the carotids, or in the coronary or cerebral arteries. The third query is complex. The author endorses Cantelmo's views. The causes for the formation of a thrombus are to be sought primarily in changes in the vessels, brought about by ligatures, contusions, crushing, wounding or rupture. The author thinks also that thrombophlebitis caused by parasites will explain many cases of embolism.

Rivista di Clinica Pediatrica, Florence

26: 165-248 (March 25) 1928

Scleroderma of the New-Born. U. de Gironcoli.—p. 165.
*Exudative Diathesis; Hereditary Transmission. G. B. Savelli.—p. 172.
Fat and Cholesterol Content of the Infant Lung in Health and Disease. S. Gandolfo.—p. 187.
*Olive Oil in Nutrition of Infants. D. Moggi.—p. 204.
Direct Irritability of Nerves: Tetany and Ionic Disequilibrium. V. Zamorani.—p. 218.

Hereditary Transmission and Nature of Exudative Lymphatic Diathesis.—Savelli presents the histories of a number of families in support of the belief in the hereditary transmission of such diatheses, and adduces evidence to prove their close connection and interdependence.

Olive Oil in the Nutrition of Infants.—Moggi found a mixture of olive oil and flour, in general, well tolerated by infants even during the first months of life. It agrees particularly well with atrophic infants, who show a greater tolerance for it than for the ordinary milk-flour mixture. Children fed this mixture withstand the minor parenteral infections more easily, and with less damage to the intestine and to the state of nutrition. In tuberculosis it gives good results. Not only the state of nutrition, but also the general appearance is much better in infants fed this mixture than in others who receive the common food mixtures. The food does not have an excessive laxative action, or, at least, his experimental subjects always presented normal stools.

Archivos Arg. de Enf. del Ap. Digestivo, Buenos Aires

3: 213-368, 1928. Partial Index

*Colectomy. D. Del Valle and J. C. Bidart Malbrán.—p. 252.
*Mega-Esophagus. M. R. Castex, A. I. Heidenreich and L. R. Repetto.—p. 264.
Intestinal Parasites. M. R. Castex and D. Greenway.—p. 276.

Two-Stage Colectomy: Recovery.—Del Valle and Bidart's patient was a well developed man. The cecum, the ascending and the transverse colon were resected. There was a narrowed segment and adhesions. This was a case of congenital intestinal malformation, with deficient rotation of the ascending colon, anomalous coalescence, pericolitis, angulations and segmentary strictures which were well borne for thirty-one years, as the patient is 35 years old and his symptoms appeared only four years ago. The colonic malformation on the right side could be explained embryologically as an arrest of the process of torsion and transfer toward the right of the median intestinal loop of the mesentery and the small intestine. A chronic inflammatory condition was superimposed on the congenital abnormalities, with obstructive attacks ending with abundant diarrhea, which, in a colon with poor peristalsis and drainage, had taken a chronic course, affecting the general condition of the patient and the whole gastro-intestinal tract.

Mega-Esophagus.—In Castex, Heidenreich and Repetto's case, it was thought that the mega-esophagus was due to diaphragmatic obstruction, and that this obstruction was produced by an inflammatory process caused by past and present toxic conditions, the result, probably, of an epigastric trauma sustained by the patient eight years before the onset of his present illness. The tongue was coated and the teeth were in very poor condition. Roentgen-ray examination of the esophagus showed considerable dilatation in the cervical and thoracic, superdiaphragmatic and abdominal portions. There was an enormous increase in its capacity, as it could easily contain a quart of opaque mixture. The peristaltic contractions were active and energetic. The authors obtained the lower third of the esophagus and the upper part of the stomach at the necropsy. The muscular layer of the esophagus was considerably developed, and it had a thickness of 1 cm. in its superdiaphragmatic portion. On the other hand, in the infradiaphragmatic portion up to the cardia, the muscular wall was very thin. There were considerable changes in the diaphragm, in the area around the esophagus.

Archivos Latino-Americanos de Pediatría, Buenos Aires

22: 1-60 (Jan.) 1928

Infant Mortality. C. S. Cometto.—p. 1.
*Sequelae of Epidemic Encephalitis. G. Bermann.—p. 20.
Acute Uremia. W. Piaggio Garzón.—p. 30.
Acute Leukemia. E. Portú Pereyra.—p. 44.
Pleuropulmonary Sclerosis in a Syphilitic. A. Armand Ugón.—p. 51.

Rapid Breathing After Epidemic Encephalitis.—A girl, 5 years old, developed respiratory and mental disorders after an attack of epidemic encephalitis. This polypnea ceases periodically, being replaced by periods of apnea, which last from ten seconds to almost one minute, as shown by the pneumograms.

Crónica Médica, Lima

45: 1-44 (Jan.) 1928. Partial Index

*Amebic Dysentery in Infants. F. Chueca.—p. 25.

Amebic Dysentery in Children.—Amebic dysentery is endemic around Lima. At times it appears in small epidemics. In some cases, the disease takes the form of a general septicemic process, with abrupt onset and high fever; in others the onset is insidious, and in both groups it tends to become chronic. In children the prognosis is more serious than in adults. The ideal treatment consists in the administration of emetine combined with arsenicals, and it should be applied during a sufficient length of time to insure radical cure. The occurrence

of small epidemics justifies prophylactic treatment. Failure to find amebas in the feces should not be a contraindication to treatment; the presence of blood in the feces justifies the beginning of the treatment. Of ninety-three cases of amebic dysentery studied by Chueca, approximately 40 per cent were in children less than a year old.

Crónica Médico-Quirúrgica, Havana

54: 1-70 (Jan.) 1928

*Study of One Thousand Eight Hundred Electrocardiograms. O. Montoro and R. Pérez de los Reyes.—p. 58.

Study of One Thousand Eight Hundred Electrocardiograms.—Among 1,800 electrocardiograms revised and analyzed, 455 were normal; i. e., 26 per cent of the patients with supposed heart disease had normal hearts. During the three years in which these tracings were obtained, fifty-two, or about 4 per cent of the patients, died. There were only seven cases of auriculoventricular block. Only about 1 per cent of the patients presented abnormal rhythm. There were thirty-two cases with sinusal arrhythmia.

Guipúzcoa Médica, Guipúzcoa

13: 43-45 (Feb.) 1928

*Diagnosis of Addison's Disease. E. Bonilla.—p. 43.
Biology of Uterine Epithelium. J. Torre Blanco.—p. 56.

Clinical Symptoms and Laboratory Data in the Diagnosis of Addison's Disease.—Hypotension is, according to Bonilla, the most important of all circulatory symptoms. A decrease in blood pressure in the course of the disease has special importance in diagnosis. Sergent's white line sign is not of practical value. Digestive symptoms, although found constantly, are not characteristic. Absence of melanoderma may enable one to exclude the diagnosis, but its presence is not so important, since it is found also in certain endocrine disturbances, diseases of the liver and in argyrosia. It is inadvisable to use the test of hypersensitiveness to insulin. There is great tolerance to carbohydrates.

Prensa Médica Argentina, Buenos Aires

14: 977-1008 (Feb. 29) 1928

*Drugs Stimulating Biliary Secretion. M. Soto.—p. 977.
Acute Glomerulonephritis. C. Cardini.—p. 994.
Function of Spleen. A. H. Roffo.—p. 1000.

Pharmacodynamic Study of Production of Bile.—After studying the various stimulants of bile in animals, Soto concludes that the majority of such substances belong to the aromatic group. All cyclic organic acids that were tried, with the exception of isophthalic acid, stimulated the production of bile. The substitution of a carbon atom in the place of a nitrogen atom does not lower the stimulating action of the substance. The results obtained justify further experimentation with these substances.

Revista Médica del Rosario, Rosario de Santa Fe

18: 1-47 (Jan.) 1928

High Frequency in Otorhinolaryngology. J. O. Agneta.—p. 1.
*Pharyngectomy. R. Rivas Jordan.—p. 6.
Slow Endocarditis. J. Martinez.—p. 11.
Coxa Plana. L. Chiodin.—p. 29.

Removal of the Pharynx with Reformation of the Wall and Healing.—In a patient, aged 52, a tumor in the anterior wall of the epiglottis, which had produced symptoms for one year, was removed under paravertebral anesthesia, with 2 per cent procaine hydrochloride. The patient tolerated the long operation well and showed no signs of pain. He is now in good condition.

Santa-Fé Médico, Rosario de Santa Fe

2: 259-357, 1927

*Tuberculin Skin Tests. P. Rueda.—p. 259.
*Genital Tuberculosis. R. Landivar.—p. 271.
Tuberculosis Deaths at Rosario. F. Albornoz.—p. 281.
Sanatoriums in Flat Lands. T. Cerruti and A. Rodriguez Boer.—p. 301.
Rôle of Milk in Tuberculosis. T. Cerruti.—p. 305.

Tuberculin Skin Tests in Infants.—An analysis made by Rueda of 6,259 skin tests in 2,307 children under 2 years of age favors Mantoux's test rather than Pirquet's. Mantoux's reaction yielded similar results with human and bovine tuberculin, but was more sensitive with the first. Such tests should be performed regularly in suspected infants. The percentage of positive results was 27.7. The percentage varied from 21.9 in 2,307 children with the "human" and 19.5 in 1,540 with the "bovine" Mantoux test to 2.0 in 1,475 with Pirquet's test.

Genital Complications of Tuberculosis.—Out of ninety-eight cases of tuberculous epididymitis, operation was performed in eighty-five. The age of the patients varied from 8 months to 61 years. In the only infant in the series, the testis was completely uninvolved.

Semana Médica, Buenos Aires

35: 493-556 (March 1) 1928

Surgical Diathermy. L. Samengo.—p. 493.
Fractional Diet. T. Martini and C. Cardini.—p. 503.
*Radium Treatment of Uterine Cancer. A. J. Pavlovsky.—p. 509.
*Ileus After Gynecologic Procedures. F. E. Ciarlo.—p. 526.
Moniliformis (Bremser, 1811). J. Bacigalupo.—p. 537.
Treatment of Premature Separation of Placenta. R. Mestre.—p. 546.
Diaphragmatic Hernia. J. C. de la Vega.—p. 548.

Radium in Cancer of the Uterus.—Since large amounts of radium, up to 250 mg., have caused accidents, such as rectovaginal sinuses, etc., the author used intermittent applications. In operable cases, it is better to use Wertheim's operation; in borderline cases, radium. In inoperable cases without intense cachexia, radium should be applied to the uterus and vagina, as well as on the outside, and roentgen-ray treatment should be given.

Dynamic Noninfectious Ileus After Gynecologic Operation.—Forty per cent of all patients with paralytic noninfectious postoperative ileus showed vagosympathetic and endocrine disturbances. It is necessary to admit the existence of postoperative noninfectious ileus, entirely paralytic, in the same sense that we admit the existence of spastic ileus. The number of these cases of dynamic noninfectious ileus may be diminished with the use of intramuscular injections of solution of pituitary in addition to such procedures as position, rectal sound, irrigation of the stomach, enemas, etc.

Archiv für Psychiatrie und Nervenkrankheiten, Berlin

83: 1-144 (Feb. 24) 1928

Peculiar Inflammatory Disease of Cranial Nerves. M. Günther and F. Stern.—p. 1.
Encephalitis. A. Knapp.—p. 34.
*Peculiar Disturbances of Motor Control in Huntington's Chorea. M. Severin.—p. 58.
"Pain of Central Origin": Correction. A. Hanser.—p. 94.

Peculiar Disturbances of Motor Control in Huntington's Chorea.—Six cases with reiterative motor phenomena are reported at length by Severin. In five of these the diagnosis of Huntington's chorea could be made; in the sixth, proof of heredity was not forthcoming, which left the diagnosis uncertain. Lethargic encephalitis in the past could be ruled out. The symptoms in these cases could be grouped under two heads: deficient power to interrupt a rhythmic series of movements and spontaneous repetition of a motor action. The symptoms of these patients pointed definitely to striopallidal disease.

Deutsche medizinische Wochenschrift, Berlin

54: 423-464 (March 16) 1928. Partial Index

*Exciting Organism of Sleeping Sickness. F. K. Kleine.—p. 423.
Reinfection with Relapsing Fever and Causes of Immunity in Man. F. Plaut.—p. 424.
"Increasing Rarity of Diagnosis 'Organ Neurosis'." G. R. Heyer.—p. 426.
Reply. G. von Bergmann.—p. 427.
*Suprarenal Transplantation in Addison's Disease. H. Curschmann.—p. 428.
Anaphylaxis in Guinea-Pigs and Roentgen Irradiation. E. Herzfeld and Menna ten Doornkaat Koolman.—p. 429.
Biologic Action of Roentgen Ray. M. Schubert.—p. 429.
Determination of Blood Bilirubin. L. Jendrassik and A. Czike.—p. 430.
Oral Sepsis from Standpoint of Conservative Dentistry. O. Walkhoff.—p. 430.
*Determination of Blood Cholesterol. D. Acél.—p. 431.
Pocket Microscope for Physicians. E. Ebstein.—p. 434.

Exciting Organism of Sleeping Sickness.—Kleine submits evidence of the identity of *Trypanosoma gambiense* and *Trypanosoma rhodesiense*, gathered while he was in Africa as a

member of the International Sleeping Sickness Commission of the League of Nations in 1926-1927. In the blood of experimental animals he found both types, with all transition forms, living together. He believes that the question whether the *gambiense* or the *rhodesiense* type appears depends not on the variety of insect in which the parasite develops, but on the age of the particular epidemic. Epidemics become milder with time, unless persons infected elsewhere start a new focus of a more virulent type of the infection. The virulence of *Trypanosoma rhodesiense* was, in his experience, greater than that of *Trypanosoma gambiense*.

Suprarenal Transplantation in Addison's Disease.—Curschmann reports an unsuccessful transplantation of a suprarenal from a young epileptic in excellent physical health into a patient with Addison's disease, who was in a relatively favorable general condition. The reaction from the operation was severe and was not recovered from till the eighth day. No hormonal influence on the part of the implanted gland was evident. He believes, however, that attempts at cure or improvement by such homeotransplants should be continued.

Determination of Blood Cholesterol.—A simplified colorimetric method for determining blood cholesterol is described. It is based on the Autenrieth-Funk method and requires very little blood and no expensive apparatus.

54: 465-508 (March 23) 1928. Partial Index

Influence of Female Sex Hormone on Mammary Gland. E. Laqueur, E. Borchardt, E. Dingemanse and S. E. de Jongh.—p. 465.
Treatment of Menstrual Disturbances. K. Fleischer and O. Hirsch-Tabor.—p. 467.
Therapeutic Action of Convallaria Majalis. T. Gordonoff and L. G. Daum.—p. 469.
*Peroral Administration of Manganese in Anemia. F. Faludi.—p. 470.
Qualitatively Insufficient Food and Immunology. J. Schubert.—p. 472.
*Late Results of Streptococcus Immunization. E. Strösznер.—p. 473.
Synthalin and Injury to Liver. David.—p. 473.
Skin Disinfection for Combined Surgery and Radiotherapy. A. Simons.—p. 474.
Bilirubin Content of Blood and Tissue. G. Scherk.—p. 476.
"Practical Treatment of Masturbation." E. Loewy-Hattendorf.—p. 476.
Foreign Body in Rectum. R. Hubrich.—p. 476.
Hygiene of Stethoscope. Thilenius.—p. 477.

Peroral Administration of Manganese in Anemia.—Manganese, administered by mouth in an albuminous compound, was successful in raising the number of erythrocytes and the hemoglobin percentage in most of seventeen patients with secondary anemia and in all but one of seven cases of pernicious anemia. For the first three days, 0.3 Gm., later 0.6 Gm., was given daily, in three equal doses, after meals. Given with arsenic, it proved successful in patients whose blood arsenic, given alone, had failed to influence.

Late Results of Streptococcus Immunization.—Two years after immunization with the author's streptococcus vaccine, thirty-nine inmates of an institution for girls were retested for the Dick reaction. Three girls, aged 12, 13 and 17, who had originally given very strongly positive reactions, now gave weakly positive reactions. He advises that children who are originally strongly Dick-positive should be retested at frequent intervals and vaccinated again when the reaction reverts. No cases of scarlet fever occurred among the immunized children during the two year period.

Klinische Wochenschrift, Berlin

7: 577-624 (March 25) 1928. Partial Index

*"Keloidosis" in Man. H. Schridde.—p. 582.
*Copper in Human Blood Serum. H. A. Krebs.—p. 584.
*Experimental Hyperfunction of Islands of Langerhans. D. E. Alpern and W. P. Besuglow.—p. 586.
*Influence of Lipoid in the Diet on Infection. H. Reiter.—p. 589.
Cultures in Diagnosis of Gonorrhea in Women. E. Konrad.—p. 594.
Differential Diagnosis of Tumors in Left Hypochondrium. R. Boller.—p. 598.
Cholesterol Metabolism and Growth of Hair. R. Jaffé.—p. 599.
Reply. K. Linser and H. Kähler.—p. 600.
"Immunity in Syphilis." F. Klopstock.—p. 600.
Reply. H. Kroó.—p. 601.
Cure of Warts by Suggestion. C. L. Karrenberg.—p. 601.

"Keloidosis" in Man.—In the lungs of a few workers in sandstone quarries and in coal mines, Schridde has seen a condition similar histologically to keloid formation in the skin. The same condition was seen in one case at the base of the tongue, in the scar of a wound received during operation on the tonsils. Similar histologic changes were discovered in seven of 232 gastric ulcers. He concludes that keloid of the skin and of the tongue, chalicosis, anthracochalicosis and callous ulcer of the stomach represent a similar, peculiar disease of the connective tissue, which he calls keloidosis. For the development of this disease a congenital predisposition of the connective tissue is necessary. It remains to be investigated whether a person with keloidosis in one organ is predisposed to its development in another organ.

Copper in Human Blood Serum.—From Krebs' researches it appears that the copper of the human blood serum increases in pregnancy and in pulmonary tuberculosis, acute infections (diphtheria, scarlet fever, endocarditis), leukemia and bronchial asthma. It was found to be decreased in nephrotic renal diseases.

Experimental Hyperfunction of Islands of Langerhans.—In Alpern and Besuglow's experiments on dogs, it was found that ligation of the pancreatic duct or application of a mass ligature to a part of the pancreas was followed by changes in carbohydrate, fat and mineral metabolism, identical with the changes observed after administration of insulin. Hyperfunction of the island apparatus was evidenced, furthermore, by hypertrophy of its components; in addition, certain changes were noted in the endocrine antagonists of the pancreas. Partial exclusion of the external pancreatic secretion resulted in increased resistance of the dog's organs in respect to sugar and in a constitutional alteration of the tonus of the sympathetic, resulting in decrease in the sugar and mineral content of the blood.

Influence of Lipoid in the Diet on Infection.—The addition of a lipoid-containing substance to a normal diet increased the resistance of mice infected experimentally with mouse typhoid.

Monatsschrift f. Geburtshülfe u. Gynäkologie, Berlin

78: 237-378 (March) 1928

*Calcium Content of Blood in Normal Pregnancy, Toxemia in Pregnancy and Puerperal Diseases. M. Sserdjukoff and A. Morosova.—p. 237.
*Diabetes in Pregnancy; Insulin Therapy. F. Wesener.—p. 249.
*Diagnostic Value of Muck's Epinephrine Test for Pregnancy in Differentiation Between Tubal Pregnancy and Inflammation of Adnexa. P. Kuhlmann.—p. 257.
*Asthma in Pregnancy. G. M. Schpoliansky.—p. 260.
*Pregnancy After and with Cancer of the Uterus. C. Karg.—p. 264.
*Effect of Eclampsia on Uterine Musculature. J. Koerner.—p. 268.
One Thousand Five Hundred Pertubation Cases. A. Mandelstamm.—p. 271.
Extremely Small Hidden Varicose Ulcer of Vagina. H. Hinselmann.—p. 278.
Mixed Tumor of Uterus (Body). E. Fels.—p. 279.
Carcinosarcoma of Uterus (Mixed Tumor). J. Schiffmann.—p. 287.
Epithelioma of Portio with Mucoid Degeneration. W. Odenthal.—p. 294.
Anus Vestibularis. Rosenstein.—p. 298.
Bilaterality of Tumors of Ovary. W. Rosenstein.—p. 302.
Lymphosarcoma of Mamma. H. Seidemann.—p. 310.
Construction of Vagina from Sigmoid Flexure in Case of Congenital Aplasia. E. Ruge.—p. 313.
Progress of Gynecology During Twenty-Five Years. R. Asch.—p. 326.

Calcium Content of Blood in Normal Pregnancy, Toxemia of Pregnancy and Puerperal Diseases.—Sserdjukoff and Morosova assert that the blood calcium of the pregnant woman is, on the whole, fairly constant and comparable with the normal content. The same is true of toxemic states, except chorea gravidarum, when it is slightly lowered. In eclampsia, both mild and severe cases, there is not any significant variation, although occasionally there is a slight drop below normal. In nephropathia gravidarum there is always a noticeable drop below normal, more so than in cases of septic endometritis and septicopyemia. Except in these three conditions, then, the blood calcium remains within normal limits.

Diabetes in Pregnancy.—Wesener says that interruption of pregnancy because of an existing diabetes mellitus is justified only when dietetic treatment and insulin fail to effect a considerable improvement.

Diagnostic Value of Muck's Epinephrine Test for Pregnancy in Differentiation Between Tubal Pregnancy and

Inflammation of Adnexa.—In three cases, Kuhlmann found the Muck epinephrine test for pregnancy of value in diagnosing a ruptured tubal pregnancy, a gonorrheal inflammation of the adnexa and an amenorrhea. When the test is positive, it usually becomes negative within a few days after the termination of the pregnancy, in occasional cases not until after two weeks.

Asthma in Pregnancy.—In each of three pregnancies the patient suffered severely from bronchial asthma. Schpoliansky saw her in her third pregnancy. The blood calcium was markedly diminished. Intravenous injections of calcium chloride, 5 cc. of a 10 to 15 per cent solution, gave partial relief until toward the end of pregnancy, when it was entirely without effect. Induction of labor became necessary. After its termination, the asthma ceased entirely. This woman had never been subject to asthma—except when pregnant. The second patient was suffering from a high degree of hyperemesis gravidarum. Intravenous injections of calcium chloride gave immediate and permanent relief. In an ensuing pregnancy, accompanied by severe vomiting, the treatment was without effect. The vomiting became progressively worse. The patient at first refused to have her pregnancy interrupted but finally, when at the point of death, she consented. She died the following day, the vomiting having ceased only two hours before death.

Pregnancy After and with Cancer of the Uterus.—Karg reviews six recorded cases of radium treatment of carcinoma of the uterus and vulva with cure, in which a normal pregnancy is reported as having occurred from one and one half to six years afterward. All the babies were normal in every way. In twelve cases treated with radium during the pregnancy, there were nine spontaneous deliveries, one vaginal section and two miscarriages. These babies, too, were normal. The radium apparently did not have any bad effect on the child, at least up to the time of birth.

Effect of Eclampsia on Uterine Musculature.—In a case of eclampsia in which delivery was effected by cesarean section, Koerner noted a peculiar state of the uterine musculature. There was much edema and extravasation of blood and many areas in which the muscle fibers were a homogeneous mass, having lost their normal structure completely, and were negative to nuclear staining. The blood vessels were not sclerotic.

Münchener medizinische Wochenschrift, Munich

75: 465-508 (March 16) 1928. Partial Index

Clinical Importance of Certain Intestinal Poisons in the Organism. E. Becher.—p. 465.
Exogenous Injuries and Multiple Sclerosis. H. Rothschild.—p. 468.
Quartan Malaria Treatment of Metasyphilis. W. Kirschbaum.—p. 469.
*Relation Between Blood Pressure and Epileptic Attack. E. Lichtenstein.—p. 471.
New Method of Preparing Gold Sol. O. Wuth.—p. 472.
Biologic Control of Cod Liver Oil. G. Wendt.—p. 473.
*Paraffin Treatment of Rheumatic Diseases. O. Vontz.—p. 478.
*Heart Suture. W. Sudhoff.—p. 479.
Splint to Prevent Recurrence of Clubfoot. F. Breiderhoff.—p. 480.
Frame for Applying Plaster of Paris Casts in Extension. W. Engelhard.—p. 481.
Etiology and Prophylaxis of Measles; Reply to Caronia. Bürgers.—p. 481.
Morphinism and Friendship. W. Steimann.—p. 482.

Relation Between Blood Pressure and Epileptic Attack.—From measurements made in seventeen cases, Lichtenstein concludes that an epileptic whose blood pressure at the time is lower than the arithmetical mean of the blood pressure readings on three days free from attacks has ninety-four chances out of a hundred of being free from an attack during the next hour and a quarter.

Paraffin Treatment of Chronic Arthritis.—Vontz found that the paraffin pack treatment, systematically and correctly carried out, exerted a favorable influence in chronic arthritis, neuralgia and myalgia. He saw no ill effects from the treatment. On account of its cheapness and cleanliness, it is to be recommended, but the results to be expected are not appreciably better than from other physical and hydrotherapeutic measures. Its advantage is that it produces great and long continuing heat in the deeper tissues without heating the skin immoderately or irritating to any considerable degree the thermoregulating nerves.

Heart Suture.—Two cases of stab injury to the heart by psychopaths with suicidal intent are reported by Sudhoff. In each case suture of the heart was successful, in spite of the fact that a positive pressure apparatus was not available. The intercostal incision as described by Wilms, Sauerbruch, etc., was used and provided a sufficient view of the field. It is to be recommended for small hospitals with a limited supply of instruments.

75: 509-552 (March 23) 1928. Partial Index

Inoculation Malaria. B. Spiethoff.—p. 509.
*Complication of Operation on Infants. E. Makai.—p. 511.
*Treatment of Migraine with Ergotamine Tartrate. E. Trautmann.—p. 513.
Rachitic Pneumothorax. F. Hamburger and J. Siegl.—p. 513.
*Treatment of Subacute State of Polyarthritis. E. Weisz.—p. 515.
Asthma and Mites. H. Dekker.—p. 515.
New Method of Treating Infectious Diseases. S. Levy.—p. 516.
Thyroid and Body Mass. H. Hunziker.—p. 517.
Distribution of Blood Groups in Inhabitants of Bremen. I. Budde.—p. 517.
Treatment of Meniscus Injuries. F. Hahn.—p. 518.
Clauss' Great Toe Phenomena. R. Fuchs.—p. 519.
Incarceration of Shoulder in Straight Pelvic Diameter. Durlacher.—p. 520.
Pumpkin Seeds as Anthelmintic. K. Weiss.—p. 520.
Nature and Psychologic Mechanism of Addiction. A. A. Friedländer.—p. 521.
Evaluation of Blood Group Determination. A. Beck.—p. 522.

A Grave Complication of Operation on Infants.—On the basis of three cases, two of which ended fatally, Makai discusses a comparatively rare but grave complication of operations in infancy. It is characterized by high fever and extreme pallor. Convulsions may occur. The symptoms come on a few hours (occasionally as late as two or three days) after operation. The severity or duration of the operation does not seem to be a factor; infection can be ruled out. He is inclined to believe the condition to be a reaction to resorption of destroyed tissue, and to connect it with the slight or moderate rises of temperature, frequently seen after operation on adults, for which it is impossible to find a cause in the future course of healing. In the case of the grave reactions in infants, individual predisposition must be assumed, in addition to the sensitiveness of the young organism.

Treatment of Migraine with Ergotamine Tartrate.—Trautmann saw good effects on migraine from administration of ergotamine tartrate, a drug which inhibits the sympathetic. This fact gives support to the vasomotor genesis of migraine and to its sympatheticotonic basis.

Treatment of Subacute Stage of Polyarthritis.—Weisz emphasizes the importance of stopping cold applications as soon as the fulminant stage has passed, to prevent the establishment of a local anemia, which interferes disastrously with reconstruction. Moist dressings prepared with warm sulphureted water are useful in reducing subacute swellings. Massage and gymnastic exercises must be used with extreme caution in the first stage of treatment.

Wiener klinische Wochenschrift, Vienna

41: 401-436 (March 22) 1928. Partial Index

Hebra's Water Bed in Treatment of Exanthems. L. Arzt.—p. 401.
A Sanatorium in a City. C. Pirquet.—p. 403.
Balneology and Psychiatry. E. Stransky.—p. 404.
*Mobilization of Stiff Joints. J. Hass.—p. 406.
Action of Hydrotherapeutic Procedures on Gas Metabolism. W. Loewenstein.—p. 408.
*Physical Therapy of Cardiovascular Diseases. E. Freund.—p. 410.
*Balneotherapy of Renal Diseases. P. Saxl.—p. 413.
Balneotherapy of Joint Diseases. O. Gerke.—p. 416.
Mountain Air Treatment. F. Hansy.—p. 418.
*Seasonal Variations in Tuberculosis of the Hilus Glands. H. Wagner.—p. 419.
*Influence of Warm Baths on Vegetative Nervous System. A. Simó.—p. 420.
*Trauma and Rheumatism: Their Treatment. L. Schmidt and E. Weisz.—p. 422.

Mobilization of Stiff Joints.—Hass has seen such good results from bloodless mobilization (modeling redressment) in fibrous ankylosis, that he suggests that this procedure should precede instead of follow medicomechanical treatment and balneotherapy.

Physical Therapy of Cardiovascular Diseases.—Carbon dioxide baths are indicated in cases of cardiac insufficiency, in arteriosclerosis and in hypertension, whether essential or arteriosclerotic. They are contraindicated in endocarditis, pericarditis, a tendency to embolism or collapse. In cardiac neuroses and exophthalmic goiter, cooling coils over the heart, packs and other mild hydrotherapeutic procedures are better tolerated. Patients with severe decompensation are not suitable for balneotherapy. For carbon dioxide baths, Freund advises a temperature between 28 and 30 C., a duration of from ten to twenty minutes and a course of from twelve to twenty baths, one every other day.

Balneotherapy of Renal Diseases.—Patients with a tendency to uremia must avoid baths that stimulate diaphoresis, since the water lost is so great in comparison with the amount of urea and other nitrogenous substances excreted that the concentration of the latter is increased. Carbon dioxide baths are unsuited for patients with renal diseases; nephrosclerosis is not an exception. With very high blood pressure there is always danger of cardiac decompensation from balneotherapy.

Seasonal Variations in Tuberculosis of the Hilus Glands.—Wagner calls attention to a symptom that he has found definitely present in twenty-five and doubtfully present in forty of sixty-seven cases of tuberculosis of the hilus glands. This symptom is found in the fact that the general condition is decidedly worse in the summer.

Influence of Warm Baths on the Vegetative Nervous System.—Heightened lability of the blood vessels, lowered blood pressure, alteration of the cardiac rhythm and changes in the blood picture and in the electrolyte metabolism, as the result of warm baths, are evidence of their influence on the vegetative nervous system. The general depression and the appearance of subfebrile temperatures in the period of the reaction are the expression of variations in the tonus of this system. Baths stimulate the vegetative nervous system through action on the skin; the drinking of mineral water, through action on the mucous membrane of the gastrointestinal tract. The irritation of the nerves passes through the neuromuscular connective substance, causes changes in the structure of the colloids and leads indirectly to changes in the distribution of the electrolytes. The external and internal electrolytes are in a state of equilibrium. If this is disturbed, there is a change in the chemicophysical condition of the cell lipoids. The nature of the action of the vagus or the sympathetic is, accordingly, to be sought in a change in the physicochemical condition of the cell lipoids. In order to study the action of warm baths on the vegetative nervous system, the duration of the local anemia caused by epinephrine, introduced into the skin by iontophoresis, was observed in fifty patients during the course of the treatment. In forty-four there was distinct lengthening of the duration of the local anemia. In six the duration was shortened. From the variation in the length of the reaction, a variation in the tonus of the vegetative nervous system may be inferred. The action of epinephrine is characterized by excitation of the terminal apparatus of the sympathetic in almost all the organs supplied by it. The lengthening of the period of anemia is probably to be ascribed to a heightened excitability of the sympathetic nervous system, rather than to a vagotonia.

Trauma and Rheumatism: Their Treatment.—Schmidt and Weisz treat traumatic and rheumatic exudates with baths of a temperature not higher than from 40 to 50 C. and lasting from thirty to sixty minutes.

Zentralblatt für Gynäkologie, Leipzig

52: 537-600 (March 3) 1928

Value of Complement Fixation Reaction with Active Serum in Diagnosis of Gonorrhea. R. Brühl.—p. 539.
Tuberculosis of Uterus. O. Heesch.—p. 541.
Diagnostic and Therapeutic Value of Puncture of Douglas' Culdesac. G. Conrad.—p. 545.
*Foot Prints of the New-Born: Value as a Means of Identification of Children. M. Henkel.—p. 548.
"Modification of Winter's Forceps": Reply to Dunkel. W. Zangemeister.—p. 550.
Conduct of Puerperium. M. Samuel.—p. 551.
Two Cases of Subcutaneous Injury of Abdominal Wall. W. Kolde.—p. 553.
Diagnosis of Extra-Uterine Pregnancy. B. A. Iwanoff.—p. 559.
Tissue Puncture in Diagnosis of Inoperable Tumors. H. Hellendall.—p. 561.

Foot Prints of the New-Born: Value as a Means of Identification of Children.—Henkel's experience with foot prints corroborates reports made by Döderlein and others that they are not to be relied on as a positive means of identification. The foot markings change with age—so much that all similarity between the prints of the same foot is lost entirely.

Norsk Magazin for Lægevidenskapen, Oslo

89: 217-344 (March) 1928

*Otogenous Cavernous Thrombosis. R. Moe.—p. 217.
*Blood Calcium in Otosclerosis. C. F. Lindeman.—p. 223.
Estival Hemeralopia. T. Wittenberg.—p. 228.
Family of Criminals. S. Dahlstrøm.—p. 232.
*Simple Ulcer in Small Intestine. J. Schilling.—p. 249.
*Herpes Zoster: Chickenpox. M. Solberg.—p. 257.
Transport of Malarial Blood and Attempted Treatment of Relapsing Fever. H. H. Dedichen.—p. 258.
Bromsulphthalein Method in Determination of Liver Function in Surgery of Urinary Tract. E. Hegge.—p. 264.
*Primary Tumor of Endocardium. G. Guldberg.—p. 272.
Intussusception of Meckel's Diverticulum with Consequent Intussusception of Small Intestine. J. Holst.—p. 279.
Blood Transfusion in Surgery. E. Platou.—p. 284.

Otogenous Cavernous Thrombosis.—In Moe's first case, in a child, aged 8, there was acute otitis with mastoiditis, followed by symptoms of sinus phlebitis. Treatment was without effect and meningitis set in, after which symptoms from the cavernous sinus appeared. Necropsy confirmed the diagnosis of cavernous phlebitis, but afforded no certain indication as to the origin of the phlebitis. He is inclined to regard the meningitis as secondary to the cavernous phlebitis. In the second case, in a child, aged 3½, symptoms of a purulent infection in the left orbit were followed by symptoms from the other orbit and simultaneous meningitis, fatal in four days. An acute otitis media was found with involvement of the cells toward the apex of the petrous process, extradural abscess, encephalitic focus in the apex of the temporal lobe, together with extensive thrombosis in the cavernous sinus.

Blood Calcium in Otosclerosis.—Lindeman's investigations failed to show any causal relation between the calcium content of the blood and otosclerosis.

Simple Ulcer in Small Intestine.—To thirty-seven cases reported in the literature, Schilling adds one case, that of a woman, aged 47, with sudden perforation of an intestinal ulcer, in appearance and structure resembling simple gastric or duodenal ulcer, and rapidly fatal peritonitis. Of the thirty-eight cases, the ulcers perforated in thirty-two, with a mortality of 84.4 per cent. The six nonperforated ulcers were discovered at operation for supposed gastric or duodenal ulcer or appendicitis; five were cured. He asserts that these intestinal ulcers can be diagnosed only at operation or at necropsy. During operation for acute peritonitis the possibility of intestinal ulcers should be borne in mind. Their usual seat is in the upper or lower portion of the small intestine. He is unable to explain the atrophy of the spleen accidentally discovered in his case.

Herpes Zoster: Chickenpox.—Solberg observed in a woman, aged 39, a varicella-like generalized disorder which appeared three weeks after the onset of herpes zoster in her husband; chickenpox had been unknown in the locality for about five years and has not occurred since. He also mentions the case of a man with a generalized disease resembling chickenpox, with slow convalescence, without the occurrence of another case in the large household.

Primary Tumor of Endocardium.—In Guldberg's case, in a woman, aged 76, with symptoms resembling those of angina pectoris, of six months' duration, necropsy revealed a round, plum-sized tumor in the left atrium, also extensive arteriosclerosis in the aorta and coronary arteries, fibrous myocarditis, and multiple pulmonary emboli. No evidence pointed to the tumor as the cause of death. Examination showed the tumor to be a fibroma with abundant blood vessels and the seat of hemorrhagic infiltrations. The case supports his view that true tumors occur in the endocardium.